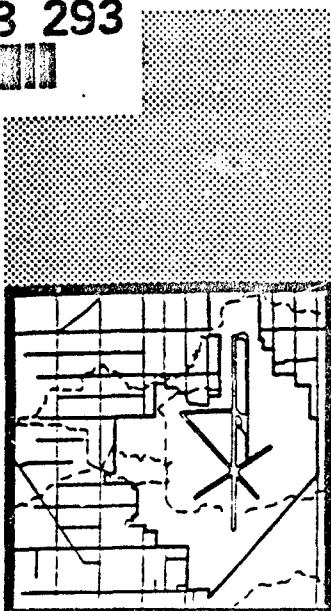


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INSTALLATION RESTORATION PROGRAM (IRP)
STAGE 3

McCLELLAN AIR FORCE BASE

PREPARED BY:
Radian Corporation
10395 Old Placerville Road
Sacramento, California 95827

OCTOBER 1991

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OPERABLE UNIT B
PRELIMINARY ASSESSMENT
SUMMARY REPORT

VOLUME III: APPENDICES C, D & E

FINAL

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for public release and sale; its
distribution is unlimited.

PREPARED FOR:
McCLELLAN AFB / EM
McCLELLAN AFB, CALIFORNIA 95651

91-13923

Environmental Services Office/Environmental Restoration Division (ESO/ER)
United States Air Force Center For Environmental Excellence
Brooks Air Force Base, Texas 78228-5501

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INSTALLATION RESTORATION PROGRAM (IRP)
STAGE 3

OPERABLE UNIT B PRELIMINARY ASSESSMENT
SUMMARY REPORT

VOLUME III: Appendices C, D, & E

FINAL

FOR

McCLELLAN AFB/EM
McCLELLAN AFB, CALIFORNIA 95652-5990

OCTOBER 1991

PREPARED BY:

Radian Corporation
10395 Old Placerville Road
Sacramento, California 95827

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United States Air Force Center for Environmental Excellence
Mr. Patrick Haas (Technical Project Manager)
Environmental Services Office/Environmental Restoration Division (AFCEE/ESR)
Brooks Air Force Base, Texas 78235-5501





DEPARTMENT OF THE AIR FORCE

HEADQUARTERS SACRAMENTO AIR LOGISTICS CENTER (AFLC)
McCLELLAN AIR FORCE BASE, CALIFORNIA 95652-5890



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EMR

17 OCT 1991

RECT Operable Unit (OU) B Preliminary Assessment Summary Report - Final

TO See Distribution

1. The referenced document is attached for your record (See Atch 1). Our responses to your comments had been sent to you earlier. This is a secondary document as per Section 7 of the Interagency Agreement (IAG). We are, however, finalizing the report as it is an important document that summarizes all the site data.
2. In addition to your comments on the subject report, we have also incorporated relevant comments on the OU A Preliminary Assessment Summary Report to improve the format of the report and define investigative procedures in more detail. Our responses to your comments are included in the appendixes of relevant site reports.
3. This document has been prepared for the United States Air Force for the purpose of aiding in the implementation of a final remedial action plan. The ongoing nature of the Remedial Investigation/Feasibility Study, also with the evolving knowledge of site conditions and chemical effects on the environmental and health, must be considered when evaluating this document, since subsequent facts may become known which may make this document premature or inaccurate. Acceptance of this document in performance of the contract under which it was prepared does not mean that the United States Air Force or the Department of Defense adopts the conclusions, recommendations, or other views expressed herein which are those of the contractor only and do not necessarily reflect the official positions of either department. The attached Radian document has been reviewed as matter involved in litigation and has been approved for release to the general public.
4. If you have any questions, please contact me at (916) 643-0531.

BUD HODA
Project Officer

1 Atch
Report

Distribution:
Cal-EPA (M. Malinowski)
EPA (L. Mitani)
RWQCB (A. MacDonald)



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Appendix E -- Regulatory Agency Comments and Responses to Comments



APPENDIX C

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Study Area Information Summary Sheets

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INFORMATION SUMMARY SHEET FOR SITE 23

DESCRIPTION

Site 23 is the location of a former burial pit and is currently the location of Building 781, which is a chemical storage facility.

GEOGRAPHIC INFORMATION

Figure C-1 shows the current features at Site 23 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,240/2,165,050

Area within boundaries = 176,708 square feet

Boundaries delineated using information from:
Aerial photographs.

CURRENT ACTIVITIES

Building 781 is located within the site boundaries. Building 781 is the primary chemical storage and distribution facility for McClellan AFB. Radian's site inspection was conducted on 10 March 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: DISPOSAL PIT

Description:
The location was used as a burial pit.

Period of operation: 1957 to 1971

Types of materials handled:
Burn residues
Semivolatile organic compounds (unspecified)
Volatile organic compounds (unspecified)

Specific chemicals handled:
No specific chemicals have been identified.

Disposal methods:
Burial on-site.

B. Activity/Area: BUILDING 781

Description:
Building 781 has been the primary chemical storage and distribution facility for McClellan AFB since 1971.

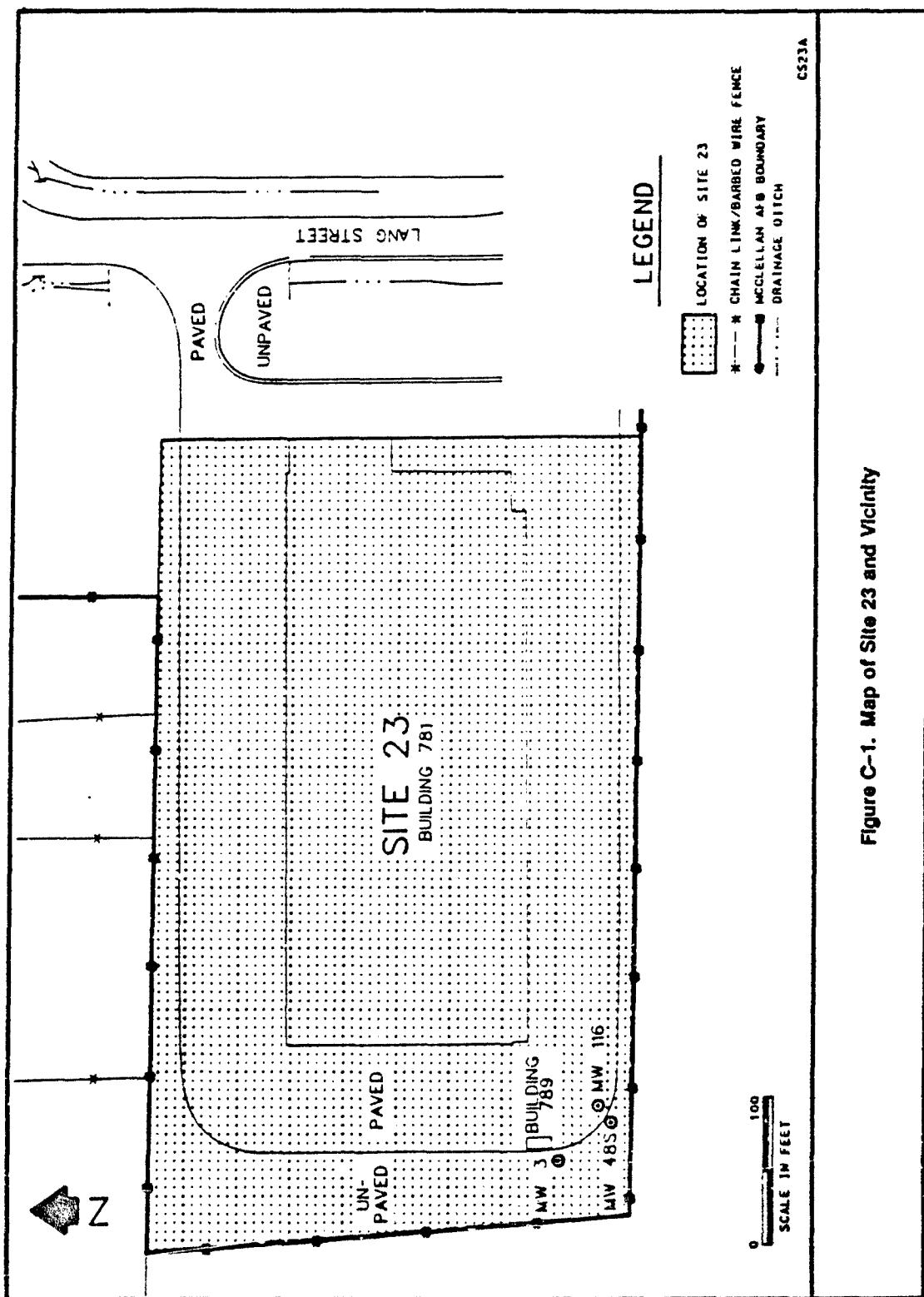


Figure C-1. Map of Site 23 and Vicinity

Period of operation: 1971 to Present (1990)

Types of materials handled:

Acids
Bases
Fuels and oils
Heavy metals
Paints
Solvents

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are generated.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 10 (Figure C-2 shows boring locations)

Odors or visual evidence of contamination noted:

Odors, discolored soil, or buried debris were noted in 7 of the 10 borings. The odors were described as "slight solvent/sewage" odors. Debris and discolored soil was found to 24 feet BGS.

Maximum recorded soil gas reading = 300 parts per million volume.

Number of soil samples analyzed for:

Volatile organic compounds = 10
Semivolatile organic compounds/pesticides/polychlorinated biphenyls = 5
Metals = 5
Other compounds = 7
(Oil and grease using EPA Method No. 413.1)

Table C-1 lists the organic compounds detected in soil samples collected from Site 23.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Inspect the water lines in the vicinity of Site 23 to determine if they are leaking. If leaks are found, they should be repaired to reduce further transport of contaminants in the soil. Collect and analyze additional soil samples to further characterize the extent of contamination.

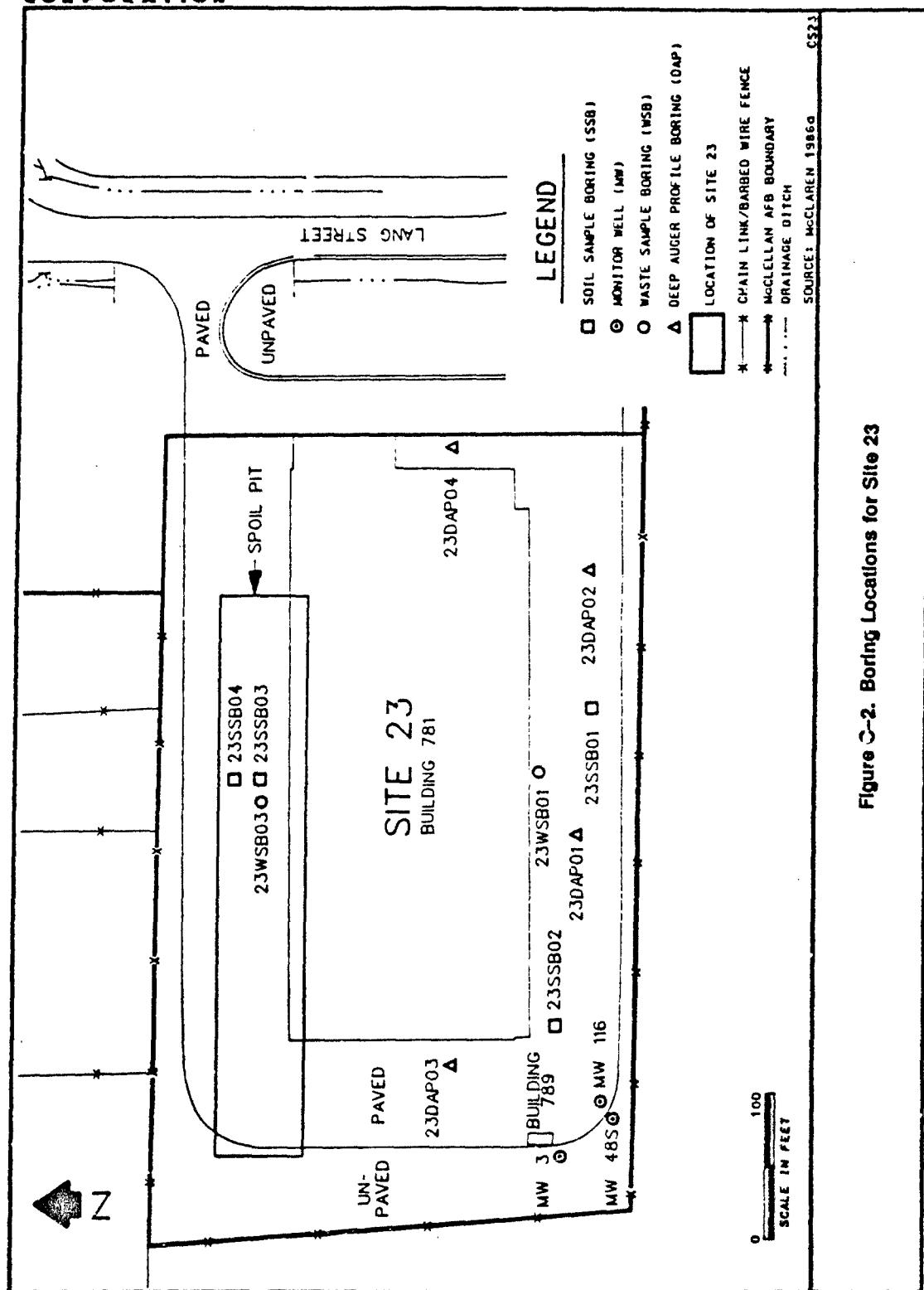


TABLE C-1. ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES FROM SITE 23

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration ug/kg (ppb)
23SSB01	69	tetrachloroethene	35
23SSB02	5	acetone	190
23SSB02	5	toluene	29
23SSB03	70	1,1,1-trichloroethane	11
23SSB03	70	2-butanone	740
23SSB03	70	acetone	220
23SSB03	29	chloroform	61
23SSB03	70	chloroform	18
23SSB03	29	methylene chloride	13
23SSB04	60	acetone	120
23WSB02	24	2-methylnaphthalene	6200
23WSB02	24	ethyl benzene	110
23WSB02	24	n-nitrosodiphenylamine	28000
23WSB02	24	pentachlorophenol	6400
23WSB02	24	phenanthrene	14000
23WSB02	24	tetrachloroethene	24
23WSB02	24	toluene	400
23WSB02	24	trans-1,2-dichloroethene	59
23WSB02	24	xylenes	660

BGS = Below ground surface.

INFORMATION SUMMARY SHEET FOR PRL 29**DESCRIPTION**

Potential Release Location 29 was reported to be the location of a scrap material burn pit.

GEOGRAPHIC INFORMATION

Figure C-3 shows the current features at PRL 29 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,200/2,167,610

Area within boundaries = 47,202 square feet

Boundaries delineated using information from:
Interviews and ground penetrating radar results.

CURRENT ACTIVITIES

The area consists of undeveloped grassland. The location is in a topographic depression. Radian's site inspection was conducted on 6 January 1989.

HISTORICAL ACTIVITIES**A. Activity/Area: SCRAP MATERIAL BURN PIT****Description:**

There was reportedly a scrap material burn pit at the location during the 1950s and 1960s.

Period of operation: 1950 to 1960

Types of materials handled:

Burn residues

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

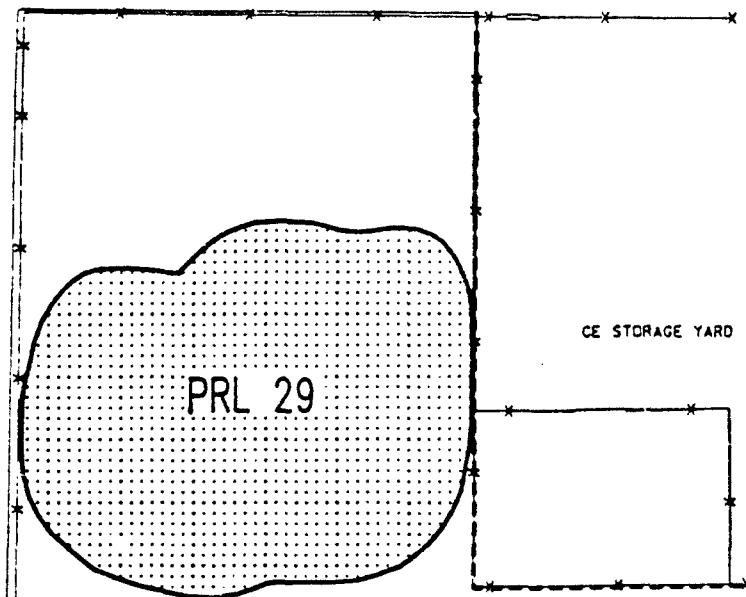
Unknown.

B. Activity/Area: GENERATOR STORAGE**Description:**

Fifty to sixty aircraft generators were reportedly buried at the location in 1974. There is no indication that hazardous materials were buried.

Period of operation: 1974

▲
N



PRL 29

CE STORAGE YARD

0 100
SCALE IN FEET

LEGEND

-  BOUNDARIES OF PRL 29
-  OTHER LOCATIONS
-  CHAIN LINK/BARBED WIRE FENCE

PSPRL29

Figure C-3. Map of PRL 29 and Vicinity



Types of materials handled:
Non-hazardous

Specific chemicals handled:
No specific chemicals have been identified.

Disposal methods:
Unknown.

C. Activity/Area: TRANSFORMER STORAGE

Description:
Transformers were reportedly stored at the site.

Period of operation: Unknown

Types of materials handled:
PCBs (The transformers may have contained PCB-contaminated oils.)

Specific chemicals handled:
PCBs

Disposal methods:
Unknown.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 7 (Figure C-4 shows boring locations)

Odors or visual evidence of contamination noted:
None.

Maximum recorded soil gas reading = 1 parts per million volume.

No soil samples were collected.

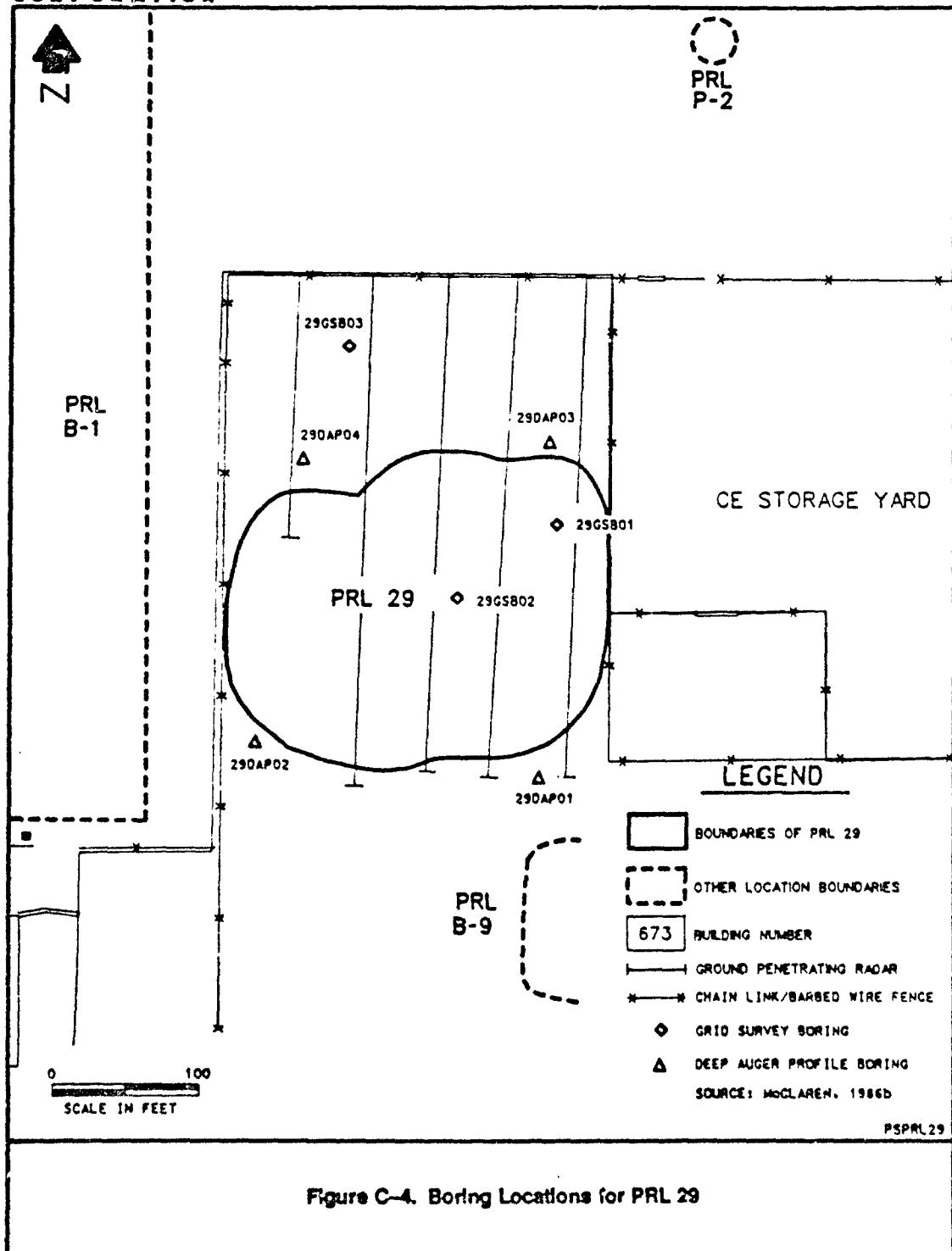
REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect and analyze soil samples to determine if contamination exists.

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INFORMATION SUMMARY SHEET FOR SITE 30

DESCRIPTION

Site 30 was reportedly the location of a surface disposal site east of Building 628.

GEOGRAPHIC INFORMATION

Figure C-5 shows the current features at Site 30 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 357,380/2,169,010

Area within boundaries = 47,246 square feet

Boundaries delineated using information from:

Previous reports, aerial photographs, interviews, and location visit.

CURRENT ACTIVITIES

Site 30 is adjacent to Building 628 and includes Buildings 629 and 631. Building 628 is unoccupied except for one room that is being used for equipment storage. Building 629 is used for chemical storage.

The location is in a topographic depression. Radian's site inspection was conducted on 2 February 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: DISPOSAL AREA

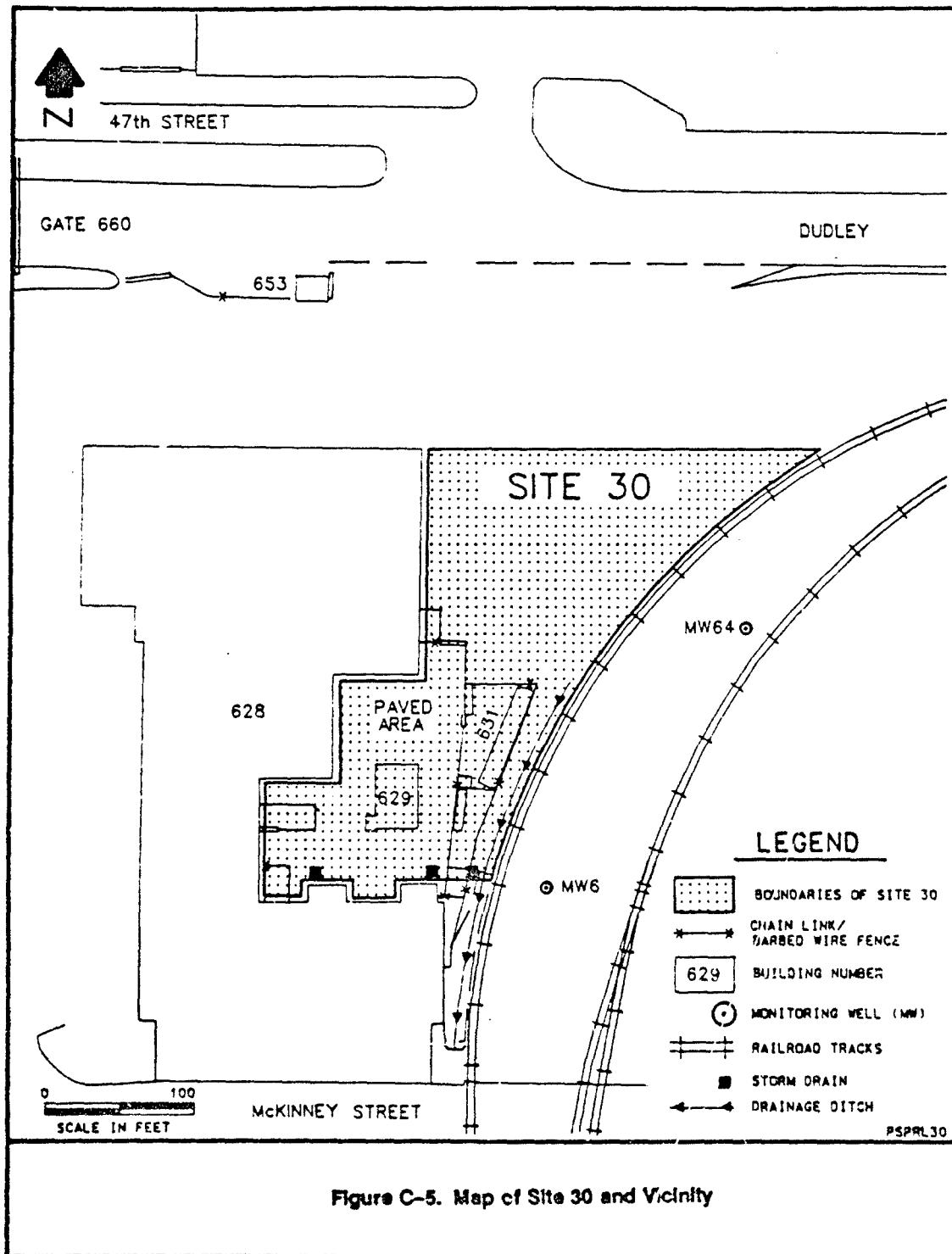
Description:

A surface disposal site was near the railroad track east of Building 628 and on the paved area near Building 629. Building 628 was a classified research laboratory (see PRL L-6). An unspecified location between Buildings 628 and 629 was reportedly used for disposal of small amounts of TCE, Freon®, diethyl ether, and low-level radioactive wash water.

Period of operation: 1960 to 1971

Types of materials handled:

Radionuclides
Semivolatile organic compounds (unspecified)
Volatile organic compounds (unspecified)



Specific chemicals handled:

4-methyl-2-pentanone
benzene
carbon tetrachloride
diethyl ether
ethyl acetate
ethyl ether
methyl ethyl ketone (MEK)
phenol
trichloroethylene
xylene

Disposal methods:

By disposal onto the pavement and allowing the waste to evaporate.

B. Activity/Area: BUILDING 629

Description:

Building 629 is used as a chemical storage building. The building is divided into four rooms and chemicals are stored according to compatibility. In the late 1970s, a fire broke out in Building 629.

Period of operation: 1957 to present

Types of materials handled:

Solvents
Acids
Bases

Specific chemicals handled:

No specific chemicals have been identified

Disposal methods:

Unknown.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 25 (Figure C-6 shows boring locations)

Odors or visual evidence of contamination noted:

None.

Maximum recorded soil gas reading = 5 parts per million volume.

Number of soil samples analyzed for:

Volatile organic compounds = 6
Semivolatile organic compounds/pesticides/polychlorinated biphenyls = 5
Metals = 3
Other compounds = 3

Table C-2 lists the organic compounds detected in soil samples collected from Site 30.

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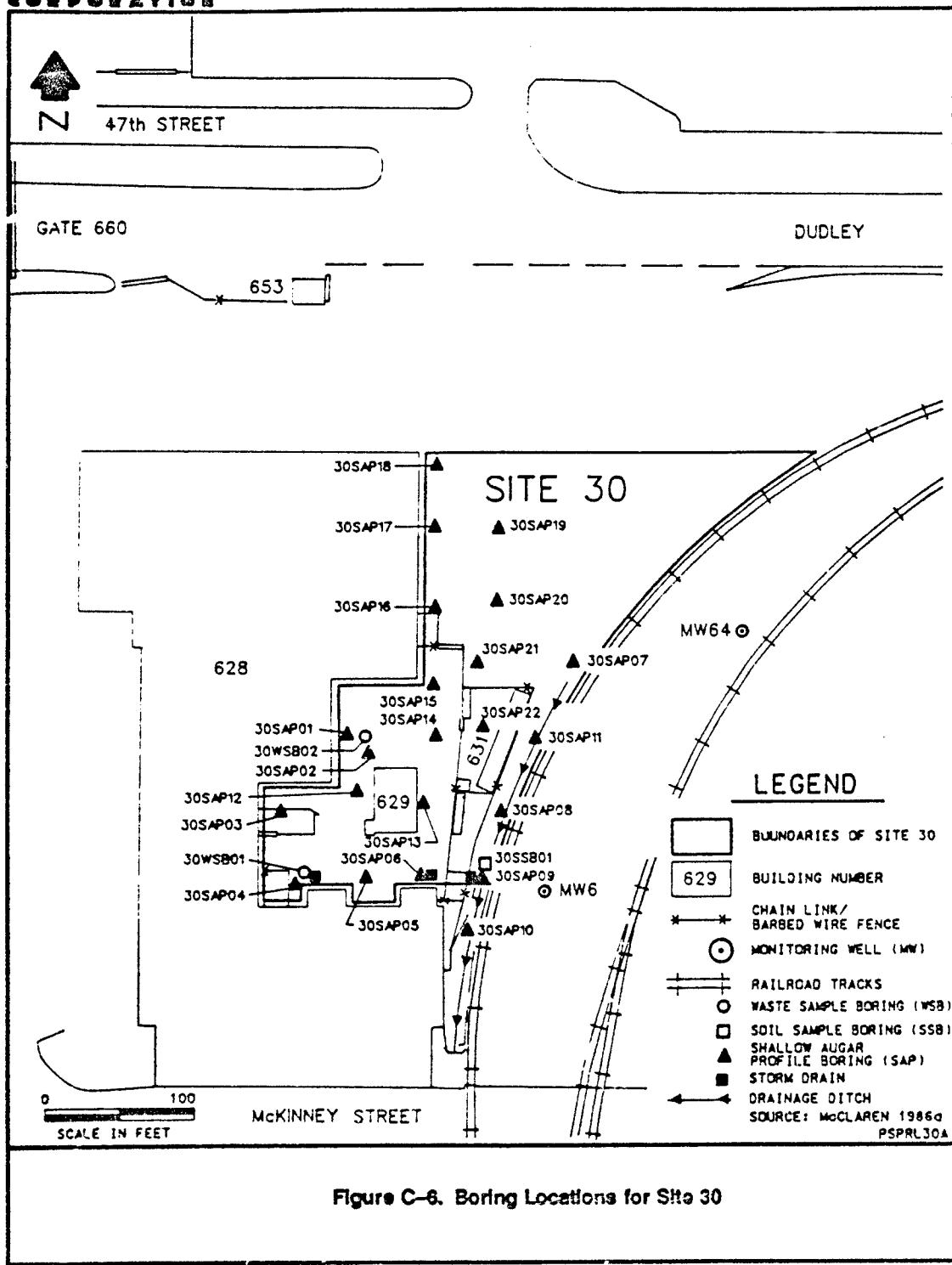


Figure C-6. Boring Locations for Site 30

C
TABLE C-2. ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES FROM SITE 30

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration ug/kg (ppb)
30SSB01	24	acetone	170
30WSB01	60	acetone	140
30WSB01	60	chloroform	34
30WSB01	49	dichloromethane	63
30WSB01	49	toluene	23
30WSB02	39	1,1,2,2-tetrachloroethane	11
30WSB02	39	4-methyl-2-pentanone	220
30WSB02	60	chloroform	13
30WSB02	39	toluene	30

BGS = Below ground surface.

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REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect and analyze additional soil samples for VOCs, semivolatile organic compounds, and metals to further characterize the extent of contamination. Conduct the RI of Site 30 and Building 628 collectively.

INFORMATION SUMMARY SHEET FOR SITE 31

DESCRIPTION

Site 31 was reportedly the location of a refuse incinerator.

GEOGRAPHIC INFORMATION

Figure C-7 shows the current features at Site 31 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,780/2,167,590

Area within boundaries = 39,010 square feet

Boundaries delineated using information from:
Aerial photographs.

CURRENT ACTIVITIES

The ground is covered with asphaltic cement and concrete. Buildings 680 and 687 are within the location boundaries. The area is being used to store miscellaneous non-hazardous materials. Radian's site inspection was conducted on 6 January 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: REFUSE INCINERATOR

Description:

A refuse incinerator operated at the location from 1963 to 1968. Ash from the incinerator was stored on-site.

Period of operation: 1963 to 1968

Types of materials handled:

Burn residues

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Ash was reportedly buried off-site.

Number of borings drilled = 20 (Figure C-8 shows boring locations)

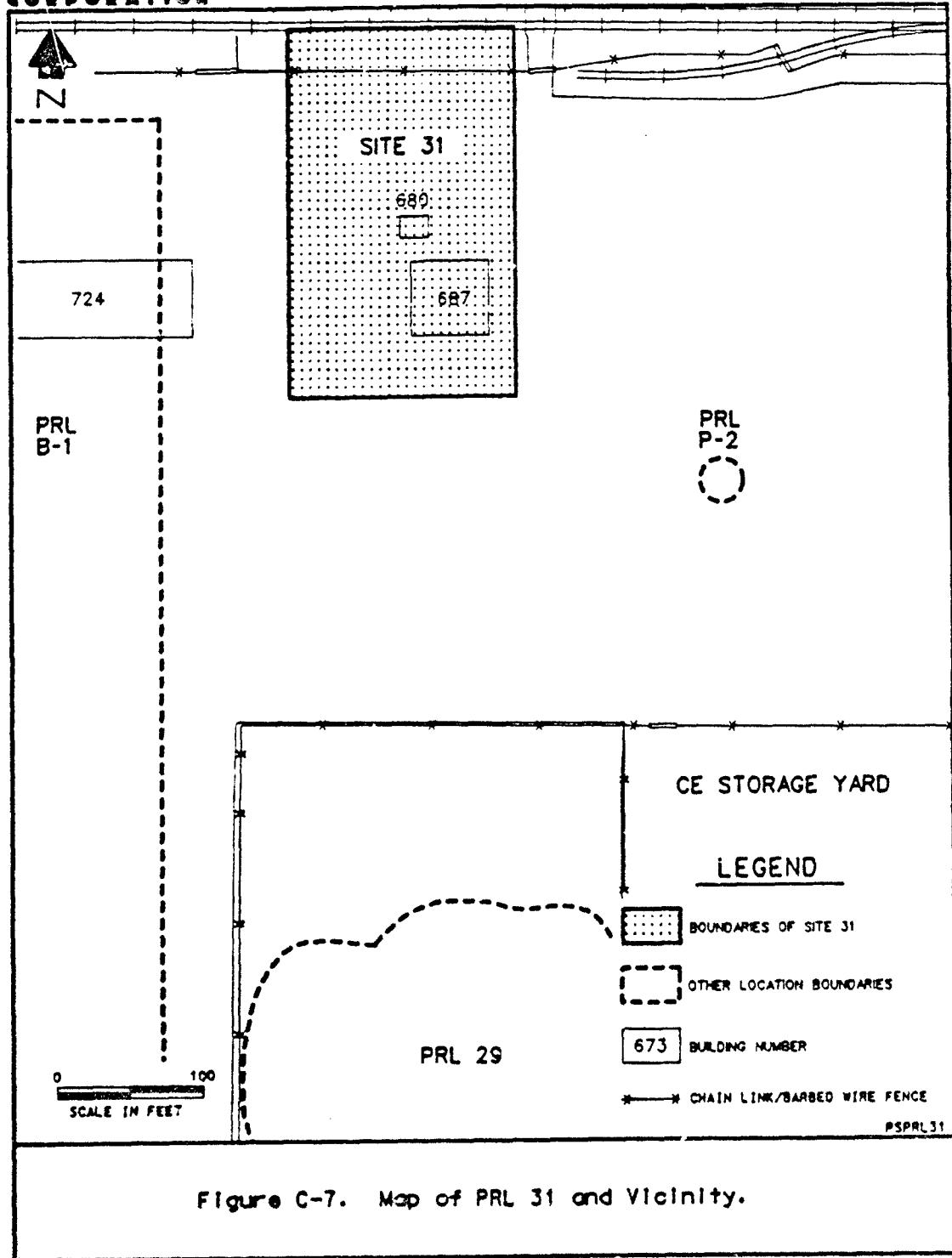
PREVIOUS FIELD INVESTIGATIONS

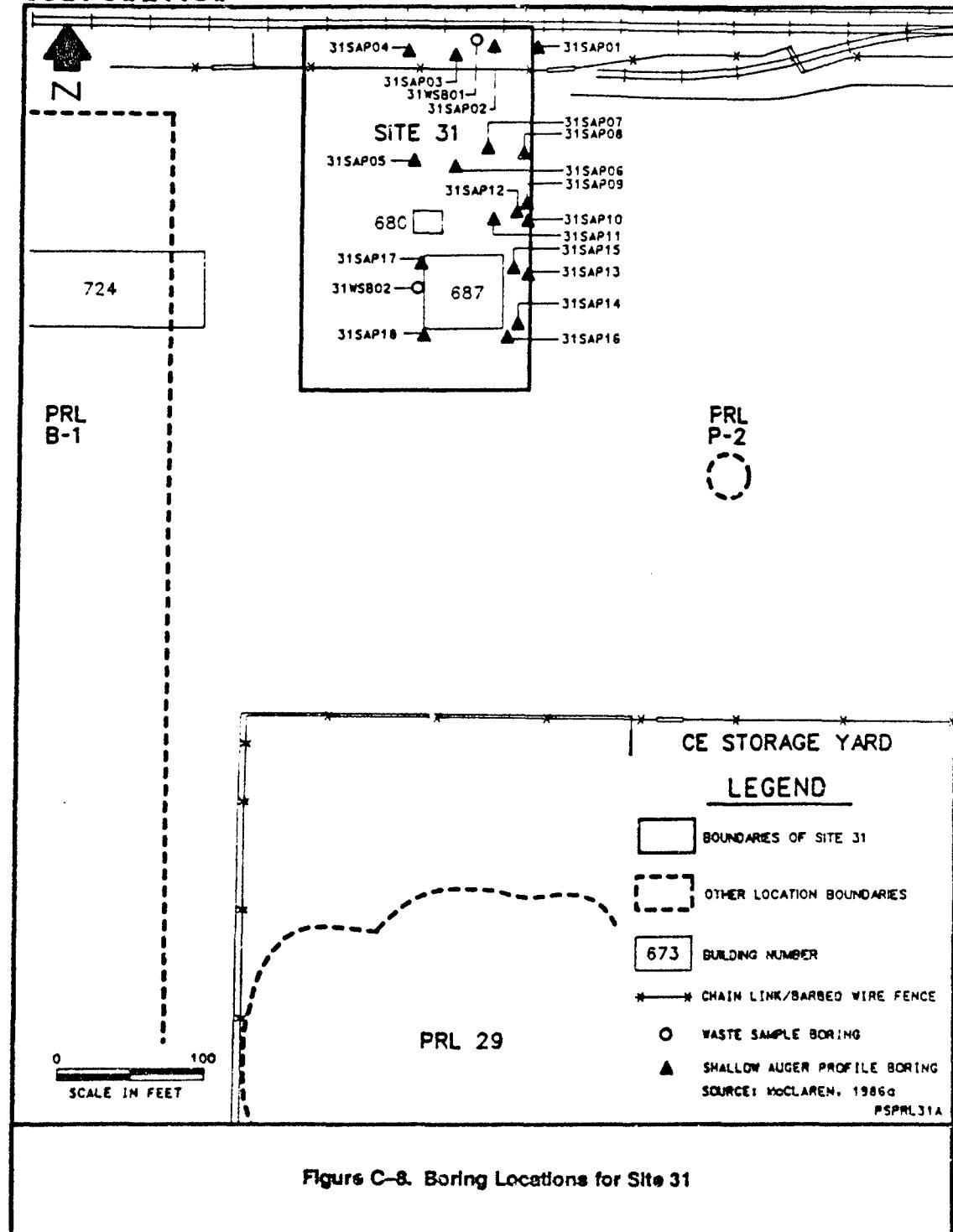
Odors or visual evidence of contamination noted:

Discolored soil was noted at 2 to 3 feet BGS in Borings 31WSB02, 31WSB15, and 31SAP18.

Odors were noted in Borings 31SAP17 and 31SAP18 at 2 to 3 feet BGS.

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Maximum recorded soil gas reading = 100 parts per million volume.
McLaren noted the high readings may have been due to moisture affecting their PID.

Number of soil samples analyzed for:

Volatile organic compounds = 4
Semivolatile organic compounds/pesticides/polychlorinated biphenyls = 2
Metals = 2
Other compounds = 2
(Analyzed for oil and grease.)

Table C-3 lists the organic compounds detected in the soil samples collected from Site 31.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect and analyze near-surface soil samples to determine if contamination is present.

TABLE C-3. ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES FROM LOCATION SITE 31

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration mg/kg (ppm)
31WSB01	14	oil and grease	190
31WSB02	9	oil and grease	200

BGS = Below ground surface.



INFORMATION SUMMARY SHEET FOR PRL 35

DESCRIPTION

Potential Release Location 35 was reportedly the location of a scrap metal burial pit.

GEOGRAPHIC INFORMATION

Figure C-9 shows the current features at PRL 35 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 357,980/2,168,780

Area within boundaries = 9,742 square feet

Boundaries delineated using information from:
Ground penetrating radar results.

CURRENT ACTIVITIES

The location is adjacent to Building 652 and covered by asphalt. Radian's site inspection was conducted on 6 January 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: REPORTED BURIAL PIT

Description:

CH2M Hill reported scrap metal was buried during World War II near the present location of Building 652. No evidence supporting the existence of a burial pit has been found. Furthermore, there is no indication that hazardous materials were buried.

Period of operation: 1942 to 1946

Types of materials handled:

Non-hazardous

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

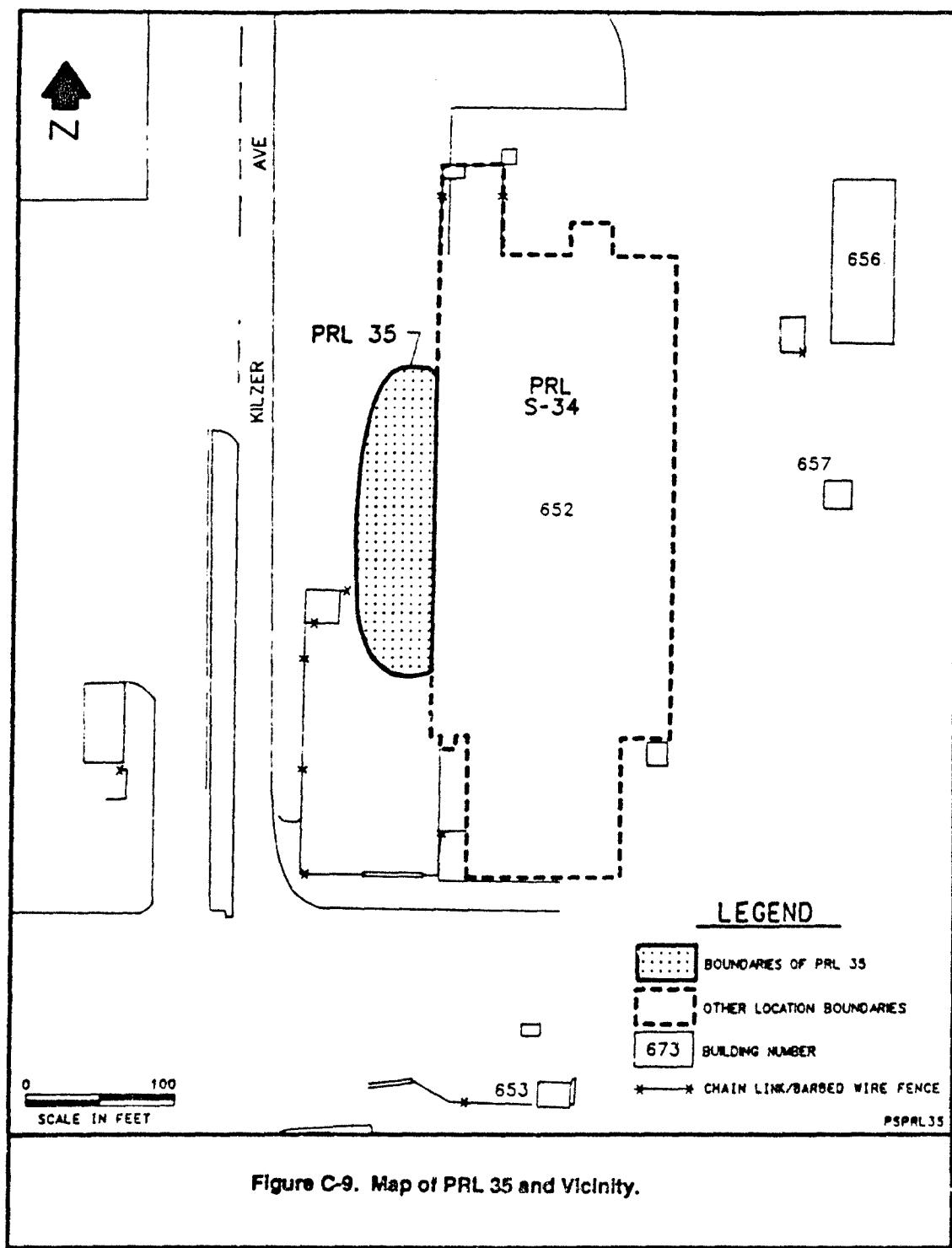
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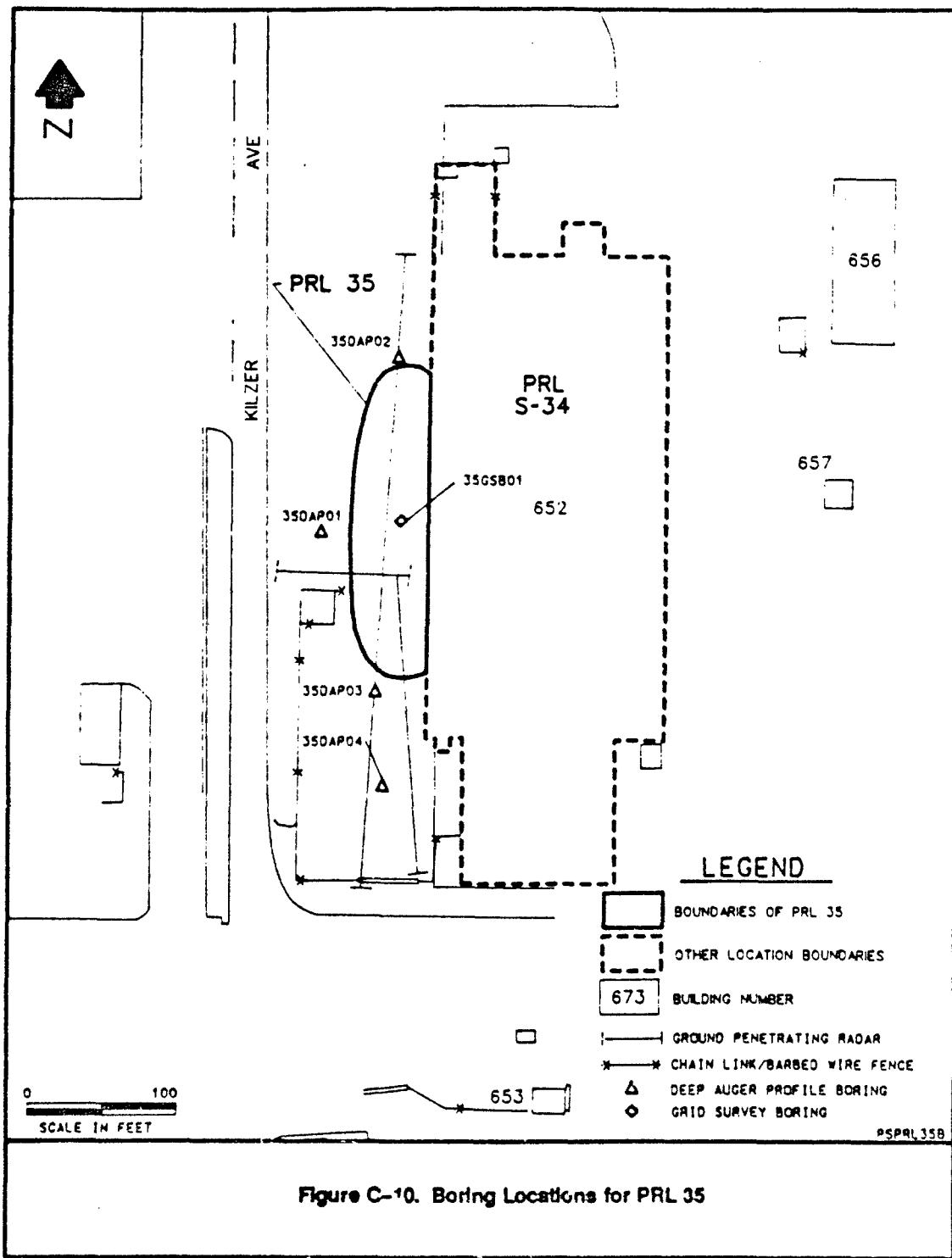
PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 5 (Figure C-10 shows boring locations)

Odors or visual evidence of contamination noted:

None.







Maximum recorded soil gas reading = 20 parts per million volume.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

No further action is required because there is no evidence that hazardous materials were handled at the location.



INFORMATION SUMMARY SHEET FOR SITE 36

DESCRIPTION

Site 36 was the chemical storage area for the Building 666 plating shop.

GEOGRAPHIC INFORMATION

Figure C-11 shows the current features at Site 36 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,130/2,169,750

Area within boundaries = 40,285 square feet

Boundaries delineated using information from:
Interviews and aerial photographs.

CURRENT ACTIVITIES

Radar van units and miscellaneous equipment are stored throughout the location. The southern half of the location is surrounded by a fence, but the gate was not locked at the time of the location visit. Radian's site inspection was conducted on 6 February 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: OPEN STORAGE LOT

Description:

PRL 36 was used to store plating shop chemicals from 1958 to 1980. Any spills of liquid or powdered chemicals that fell to the pavement strip surrounding the plating shop or in the plating shop were washed out onto the dirt of Site 36.

Period of operation: 1958 to 1980

Types of materials handled:

- Acids
- Bases
- Cyanide compounds
- Heavy metals
- Solvents

Specific chemicals handled:

- ammonium nitrate
- chromic acid
- hydrochloric acid
- nitric acid
- sodium dichromate
- sodium hydroxide
- sulfuric acid
- trichloroethane

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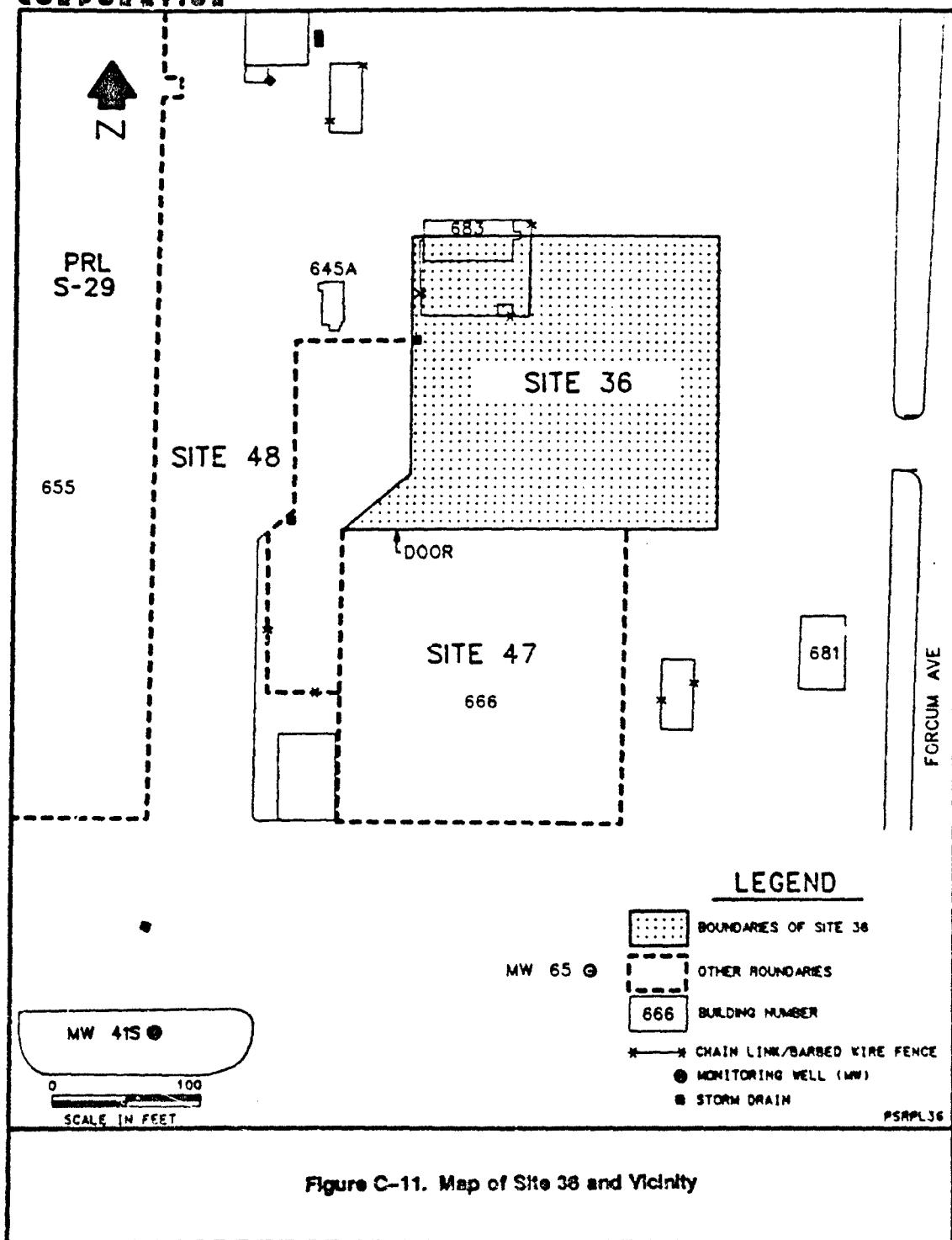


Figure C-11. Map of Site 36 and Vicinity



Disposal methods:

Chemicals stored at Site 36 were normally transferred to Building 666; any spills that occurred during this process fell to the ground at Site 36. Any spills that occurred in the northern portion of the plating shop or outside the north side of the plating shop were washed onto Site 36.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 32 (Figure C-12 shows boring locations)

Odors or visual evidence of contamination noted:

Discolored soil was noted between 3 and 7 feet BGS in Boring 48SAP03.

Maximum recorded soil gas reading = 350 parts per million volume.

Number of soil samples analyzed for:

Volatile organic compounds = 11

Semivolatile organic compounds/pesticides/polychlorinated biphenyls = 6

Metals = 23

Other compounds = 32

(Five samples were analyzed for various anions, nine samples were analyzed for oil and grease, and fourteen samples were analyzed for cyanide.)

Table C-4 lists the organic compounds detected in soil samples collected from Site 36.

REMEDIAL ACTIONS

No remedial actions are known to have occurred. IWTP No. 4 and Building 666, adjacent to the location, were dismantled in 1988.

RECOMMENDATIONS

Collect and analyze near-surface soil samples for VOCs, semivolatile organic compounds, metals, and pH to further characterize the extent of contamination. Collect samples of the soil outside of the door on the north side of Building 666 to determine if contamination is present. Install an on-site monitoring well to determine if contaminants have migrated to groundwater. Conduct the RI of Site 36 and Sites 47 and 48 collectively.

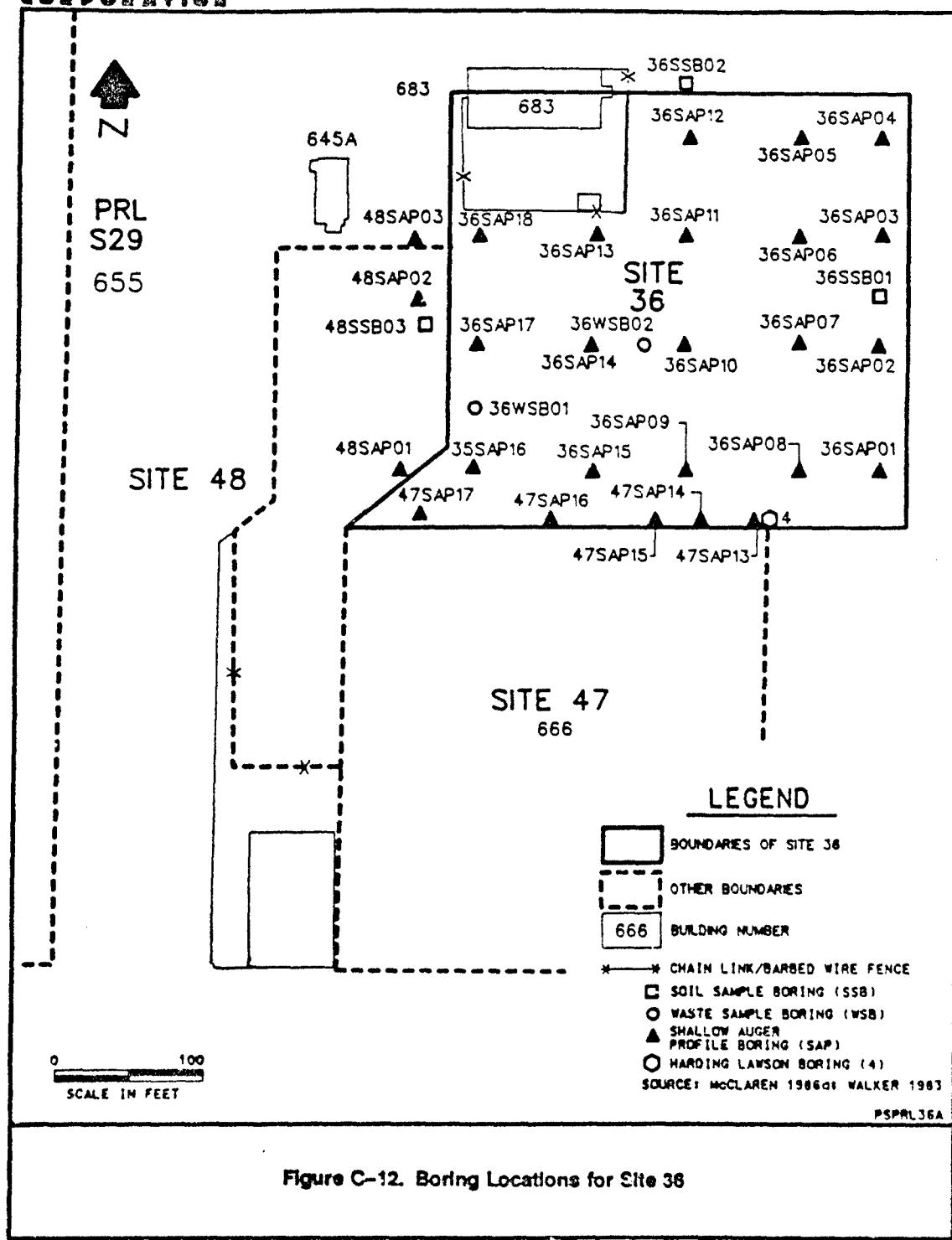


Figure C-12. Boring Locations for Site 36

C
TABLE C-4. ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES FROM SITE 36

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration ug/kg (ppb)
36SSB01	15	2-butanone	130
36SSB02	15	2-butanone	350
36WSB01	60	toluene	11
36WSB01	60	trichloroethene	16
36WSB02	35	cyanide	3.7
36WSB02	35	toluene	23
48SSB03	79	1,1,1-trichloroethane	16
48SSB03	15	acetone	200
48SSB03	79	acetone	110
48SSB03	79	chloroform	13

BGS = Below ground surface.

INFORMATION SUMMARY SHEET FOR SITE 47

DESCRIPTION

Site 47 was the location of a plating shop at Building 666.

GEOGRAPHIC INFORMATION

Figure C-13 shows the current features at Site 47 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 357,940/2,169,700

Area within boundaries = 38,004 square feet

Boundaries delineated using information from:
Site visit.

CURRENT ACTIVITIES

All that remains of Building 666 is the concrete foundation. The trenches and pits in the foundation are covered by roof structures. The site is surrounded by fencing.

A continuous and effective barrier to entry exists at the site. Radian's site inspection was conducted on 6 February 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: CHEMICAL STORAGE

Description:

The chemicals used in the plating operations were stored within the building.

Period of operation: 1957 to 1980

Types of materials handled:

Acids

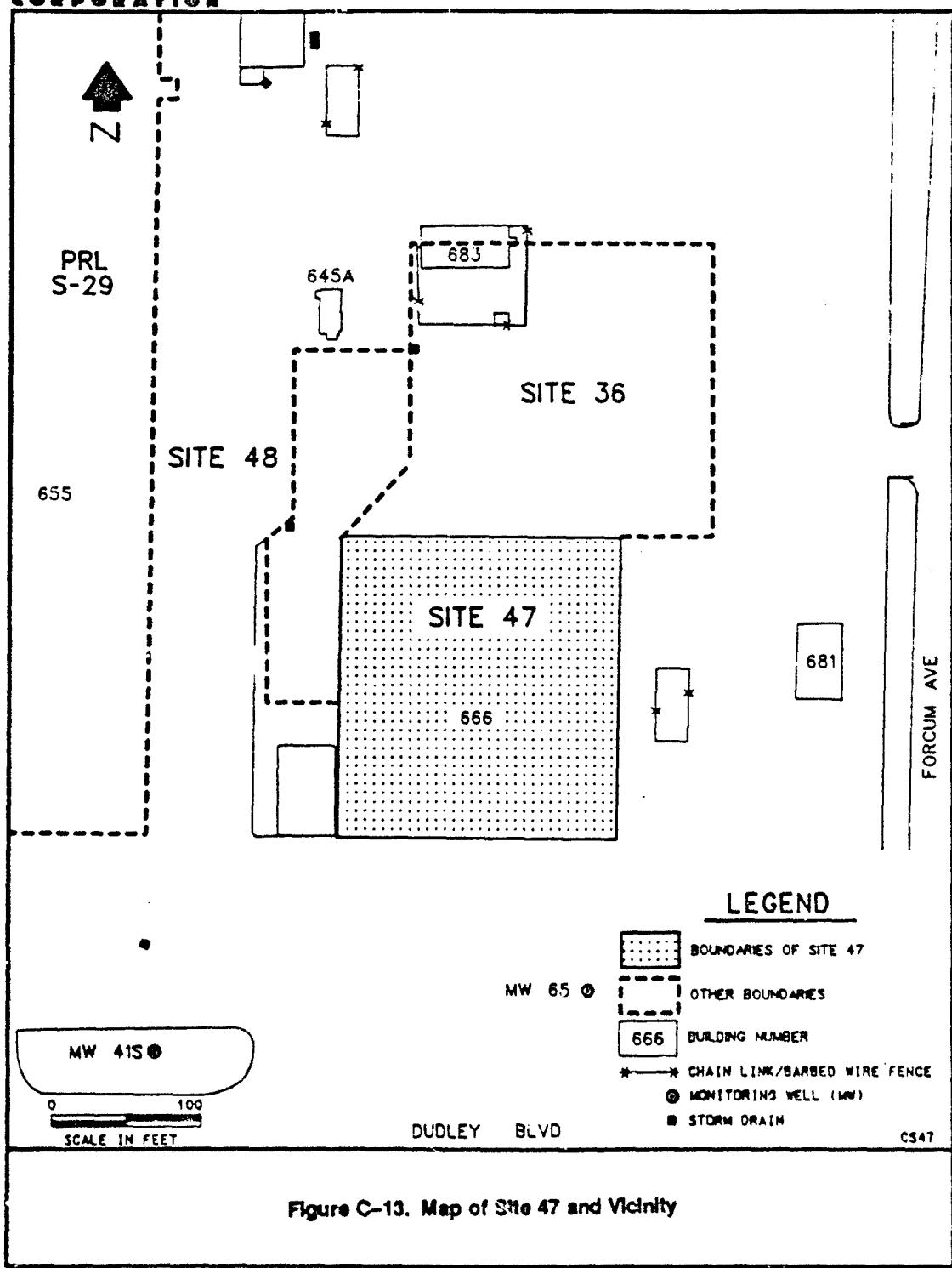
Bases

Cyanide compounds

Heavy metals

Solvents

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Specific chemicals handled:

boric acid	nickel
cadmium cyanide	nickel chloride
cadmium oxide	nickel sulfate
chromic acid	nitric acid
copper	oxalic acid
copper cyanide	phosphoric acid
ferrous chloride	potassium cyanide
fluoboric acid	potassium hydroxide
fluoric acid	rhenium
gold	silver
gold cyanide	silver cyanide
hydrochloric acid	sodium hydroxide
hydrogen fluoride	sodium phosphate
hydrogen peroxide	sulfuric acid
indium	tetrachloroethene
isopropyl alcohol	toluene
lead	trichloroethylene
methylene chloride	

Disposal methods:

No wastes were generated.

B. Activity/Area: DEGREASING

Description:

Several tanks filled with solvent were used to remove grease and wax from equipment.

Period of operation: 1957 to 1980

Types of materials handled:

Solvents

Specific chemicals handled:

acetone
methylene chloride
tetrachloroethene
toluene
trichloroethylene

Disposal methods:

Waste solvent was collected for disposal by DRMO.

C. Activity/Area: ELECTROPLATING

Description:

An electroplating operation was run in Building 666 from 1957 until 1980. Numerous plating processes were performed in the building.

Period of operation: 1957 to 1980

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Types of materials handled:

Acids
Bases
Cyanide compounds
Heavy metals

Specific chemicals handled:

boric acid	nickel
cadmium cyanide	nickel chloride
cadmium oxide	nickel sulfate
chromic acid	nitric acid
copper	oxalic acid
copper cyanide	phosphoric acid
ferrous chloride	potassium cyanide
fluoboric acid	potassium hydroxide
fluoric acid	rhenium
gold	silver
gold cyanide	silver cyanide
hydrochloric acid	sodium cyanide
hydrogen fluoride	sodium hydroxide
hydrogen peroxide	sodium phosphate
indium	sulfuric acid
isopropyl alcohol	tetrachloroethene
lead	toluene
methylene chloride	trichloroethene

Disposal methods:

Wastes were sent to IWTP No. 4 for pre-treatment.

D. Activity/Area: RADIATOR SHOP

Description:

A radiator shop operated at the northern portion of Building 666.

Period of operation: Unknown to 1980

Types of materials handled:

Bases
Fuels and oils
Solvents

Specific chemicals handled:

scodium hydroxide
Stoddard solvent

Disposal methods:

Unknown.

E. Activity/Area: HAZARDOUS MATERIALS STORAGE

Description:

Hazardous materials were stored in Building 666 after the plating operations ceased.

Period of operation: 1980 to 1982

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Types of materials handled:

Acids
Bases
Cyanide compounds
Fuels and oils
Heavy metals
Solvents

Specific chemicals handled:

ammonium nitrate
copper cyanide
dichloromethane
ferric chloride
hydrofluoric acid
lead fluoroborate
nickel chloride
nickel sulfate
sodium ferric cyanide
sodium hydroxide
tetrachloroethene
trichloroethene

Disposal methods:

The waste was taken to Kettleman Hills Disposal Facility.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 42 (Figure C-14 shows boring locations)

Odors or visual evidence of contamination noted:

Solvent odors were noted in 12 borings. In Boring 47WSB02, odors were noted to 80 feet BGS.

Maximum recorded soil gas reading = 400 parts per million volume.

Number of soil samples analyzed for:

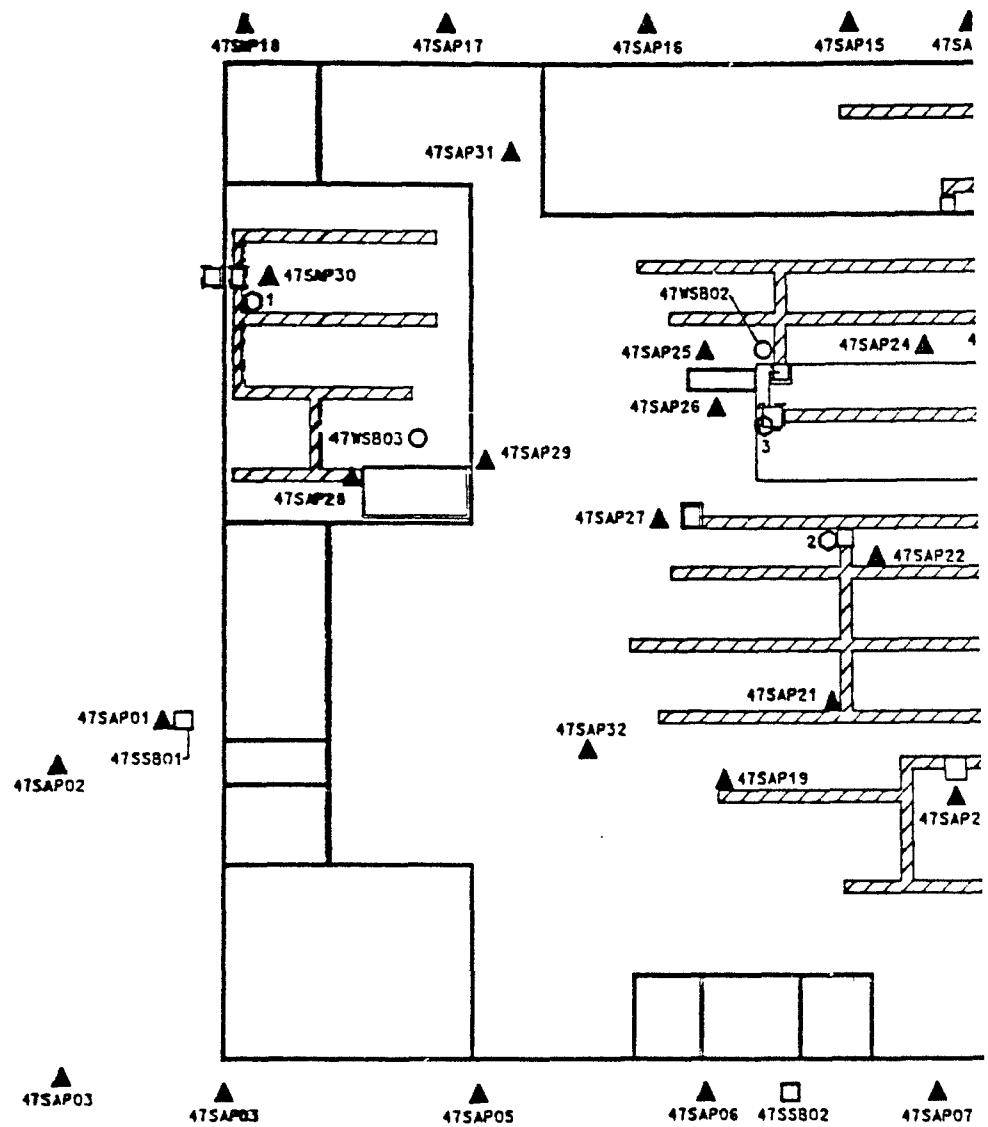
Volatile organic compounds = 12
Semivolatile organic compounds/pesticides/polychlorinated biphenyls = 6
Metals = 50
Other compounds = 72
(Three samples were analyzed using US EPA Method 413.1; 64 samples were analyzed for cyanide; and 5 samples were analyzed for cations/anions.)

Table C-5 lists the organic compounds detected in soil samples collected from Site 47.

REMEDIAL ACTIONS

Building 666 and IWTP No. 4 were dismantled in 1988. The closure plan called for the dismantling and disposal of all piping, valves, pumps, and structures. The building foundation and sumps were to be cleaned, concrete areas were to be resurfaced. All sumps were to be filled with concrete and roof caps were to be installed above the sumps. The entire area was then to be steam-cleaned and enclosed by a fence with locked gates. Based on observations made during the site visit, these actions appear to have been performed.

▲
Z



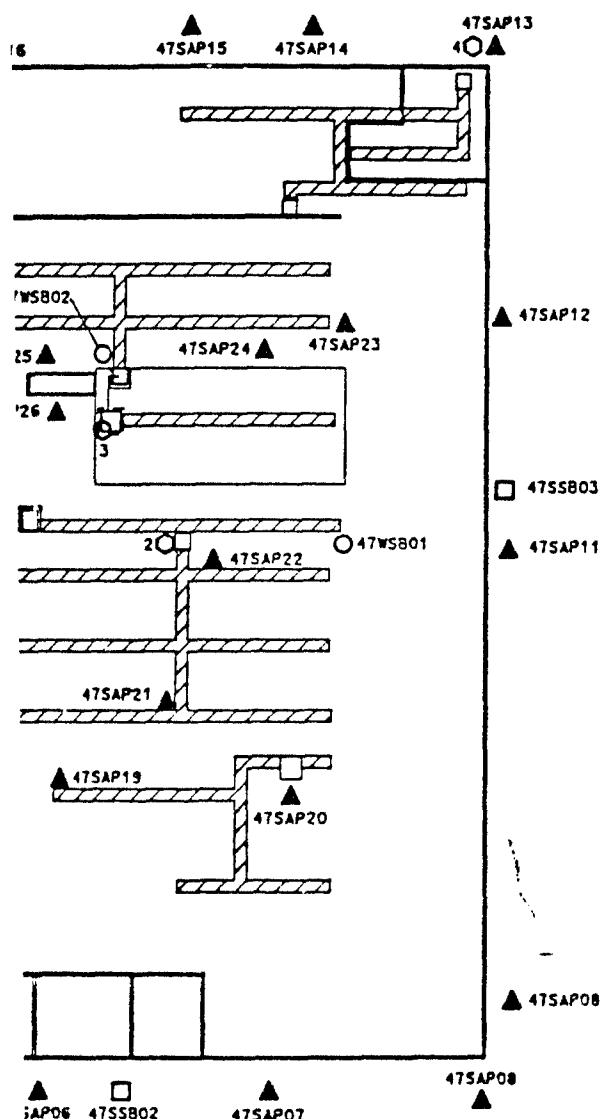


Figure C-14. Boring Locations for Site 47



TABLE C-5. ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES FROM SITE 47

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration ug/kg (ppb)
47SSB01	10	1,1,1-trichloroethane	24
47SSB01	80	1,1,1-trichloroethane	20
47SSB02	20	1,1,1-trichloroethane	17
47WSB01	45	2-butanone	160
47WSB01	59	2-butanone	110
47WSB01	45	2-hexanone	230
47WSB01	10	bis(2-ethylhexyl)phthalate	140
47WSB01	45	bis(2-ethylhexyl)phthalate	150
47WSB01	59	toluene	45
47WSB01	69	trichloroethene	16
47WSB02	60	acetone	430
47WSB02	60	benzene	10
47WSB02	60	bis(2-ethylhexyl)phthalate	120
47WSB02	23	chloroform	23
47WSB02	60	tetrachloroethene	11
47WSB02	60	trichloroethene	10
47WSB02	20	xlenes	45
47WSB02	60	xlenes	18
47WSB03	74	acetone	350
47WSB03	25	tetrachloroethene	15
47WSB03	25	toluene	11
47WSB03	60	toluene	11
47WSB03	74	toluene	26
47WSB03	60	trichloroethene	31

BGS = Below ground surface.



RECOMMENDATIONS

Collect additional soil samples to further characterize the extent of contamination. Install an on-site groundwater monitoring well to determine if contaminants have migrated to the groundwater. Conduct the RI of Site 36 and Sites 47 and 48 collectively.



INFORMATION SUMMARY SHEET FOR SITE 48

DESCRIPTION

Site 48 was the location of Industrial Wastewater Treatment Plant No. 4.

GEOGRAPHIC INFORMATION

Figure C-15 shows the current features at Site 48 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,050/2,169,590

Area within boundaries = 12,758 square feet

Boundaries delineated using information from:
Previous reports and aerial photographs.

CURRENT ACTIVITIES

All that remains of IWTP No. 4 is the concrete foundation. The site is completely paved except for a section in the northeast corner that is covered by graveled soil.

A continuous and effective barrier to entry exists at the site. Radian's site inspection was conducted on 2 February 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: CHROME RECOVERY

Description:

Chromium was recovered from wastewater containing chromic acid. The tanks used in this process were: (1) Tank 536, chromic acid holding tank; (2) Tank 542, steam evaporation tank; (3) Tank 512, anionic exchanger; (4) Tank 537, clean chrome tank; and (4) Tank 541, the dilute chromic acid holding tank.

Period of operation: 1957 to 1980

Types of materials handled:

Acids
Bases
Heavy metals

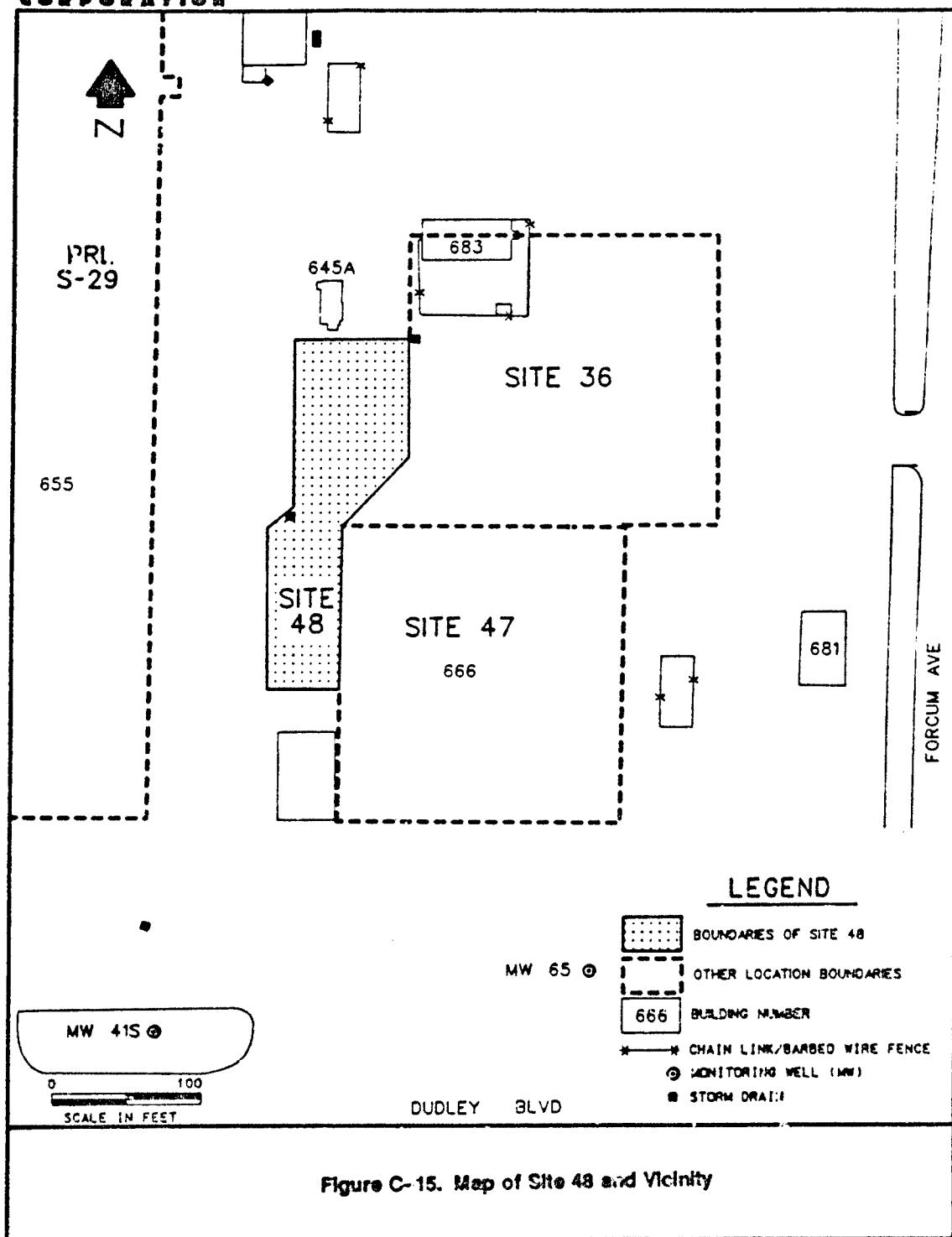
Specific chemicals handled:

chromic acid
sodium hydroxide

Disposal methods:

The wastes generated from this process are the chrome-containing solutions produced during the regeneration of the ion exchange resin from Tank 512. The solution is pumped to Tank 522 for chrome reduction.

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B. Activity/Area: CHROMIUM REDUCTION

Description:

Chromium was reduced from hexavalent to trivalent chromium in Tank 522. Concentrated acids, bases, and mercury were also in the wastewater that flowed through Tank 522.

Period of operation: 1957 to 1980

Types of materials handled:

Acids
Bases
Heavy metals

Specific chemicals handled:

ferrous sulfate
mercury
sodium chromate
sodium hydroxide
sodium metabisulfite
sulfuric acid

Disposal methods:

The effluent flowed to Tank 525 for coagulation.

C. Activity/Area: COAGULATION PROCESS

Description:

Metals were removed from plating solution wastewater in a coagulation treatment process. The tanks used in this process were: (1) Tank 523, the miscellaneous waste holding tank; (2) Tank 525, the miscellaneous waste coagulator, and (4) Tank T1, the over flow tank.

Period of operation: 1957 to 1980

Types of materials handled:

Cyanide compounds
Heavy metals

Specific chemicals handled:

calcium hydroxide
ferrous sulfate
lead
nickel

Disposal methods:

Sludge containing the hydroxides of metals were disposed of in the Area D sludge pits. The wastewater effluent was transferred to IWTP No. 1 via the IWL.

D. Activity/Area: CYANIDE OXIDATION

Description:

Cyanide wastes entered Tanks 526 and 527 and were oxidized.

Period of operation: 1957 to 1980

Types of materials handled:

Acids
Cyanide compounds

Specific chemicals handled:

chlorine

Disposal methods:

The effluent from the cyanide process tanks flow to Tanks 523 and 525 for coagulation.

E. Activity/Area: ION EXCHANGE

Description:

Cations were exchanged in chrome rinse solutions in Tanks 510 and 511. Anions were exchanged in Tanks 512 and 513. Tank 532 was a screen tank and Tank 540 was a chrome solution holding tank. Tanks 529, 534, 535, 548, and 545 were storage tanks for the chemicals used in the ion exchange process.

Period of operation: 1957 to 1980

Types of materials handled:

Acids
Bases
Heavy metals

Specific chemicals handled:

hydrochloric acid
sodium hydroxide
sulfuric acid

Disposal methods:

The wastes generated from the ion exchange process were the metal-containing solutions produced during the regeneration of the ion exchange resins. This solution was pumped to Tank 522 for chrome reduction.

F. Activity/Area: IWL

Description:

Pretreated wastewater flowed from Tank T1 west to IWTP #1 via IWL. Reports describing inspections of this section of the IWL indicated areas of broken pipe and cracked joints.

Period of operation: 1960 to 1980

Types of materials handled:

Cyanide compounds
Heavy metals

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Wastes travel through the IWL to IWTP No. 1.



G. Activity/Area: BUILDING 645B

Description:

Building 645B was used for storing insulation materials after IWTP #4 was decommissioned. Several hazardous material containers were also stored in Building 645B.

Period of operation: 1982 to 1988

Types of materials handled:

Other materials

Specific chemicals handled:

asbestos

Disposal methods:

All debris stored in Building 645B was removed and disposed of as hazardous waste before the building was dismantled.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 15 (Figure C-16 shows boring locations)

Odors or visual evidence of contamination noted:

Soil discoloration was recorded from 3 to 7 feet BGS.

Maximum recorded soil gas reading = 250 parts per million volume.

This may have been due to moisture affecting the instrument.

Number of soil samples analyzed for:

Volatile organic compounds = 9

Semivolatile organic compounds/pesticides/polychlorinated biphenyls = 5

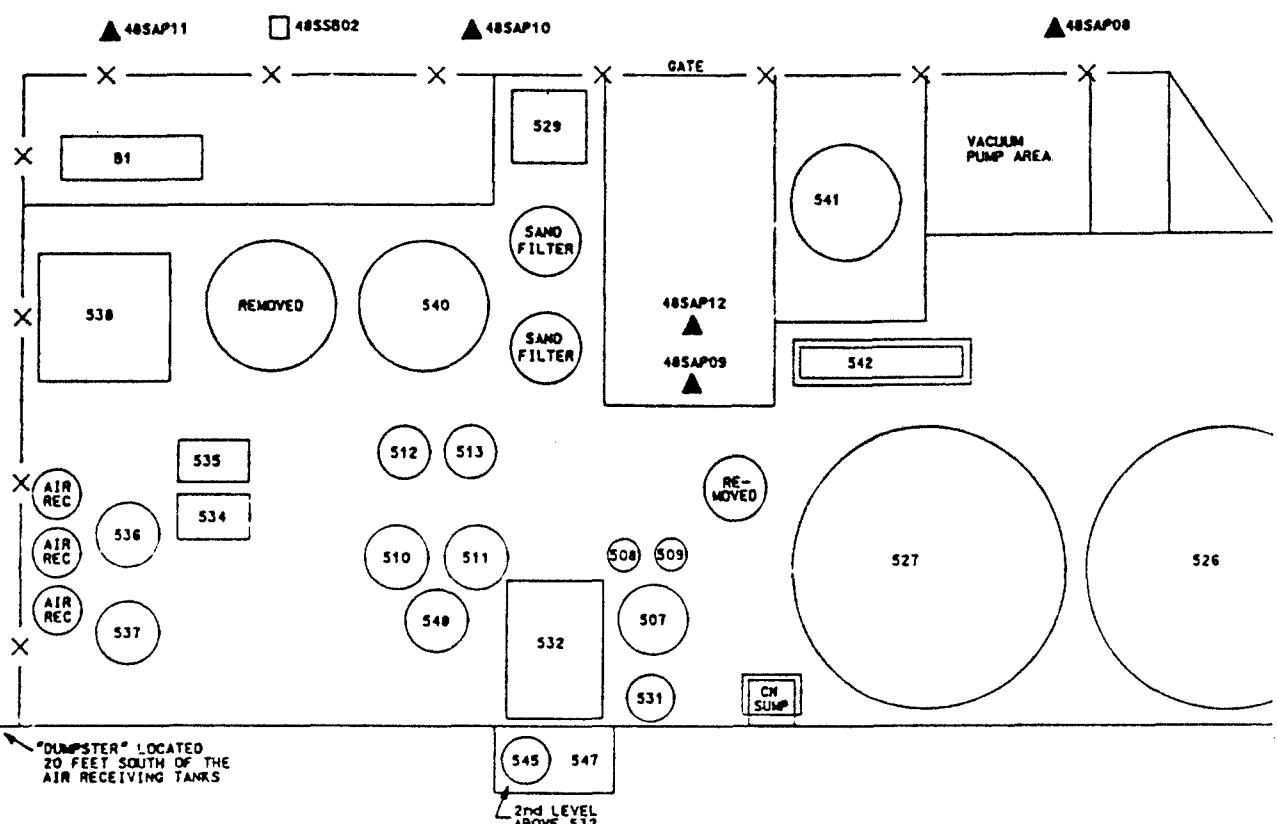
Metals = 22

Other compounds = 20

Table C-6 lists the organic compounds detected in soil samples collected from Site 48.

REMEDIAL ACTIONS

IWTP No. 4 and Building 666 were dismantled in 1988. The closure plan called for the removal and disposal of all liquids and sludges in the tanks and the dismantling and disposal of all piping, valves, pumps, and structures. The foundations, sumps, and plant water reservoirs were to be cleaned, the concrete areas were to be resurfaced, and perimeter curbs and roof caps were to be installed at the two sumps. The two water reservoirs and all openings at the water reservoirs were to be sealed with concrete. The entire area was then to be steam-cleaned and enclosed by a fence with locked gates. Based on observations made during the site visit, these actions appear to have been performed.

N BUILDING 666
SITE 47

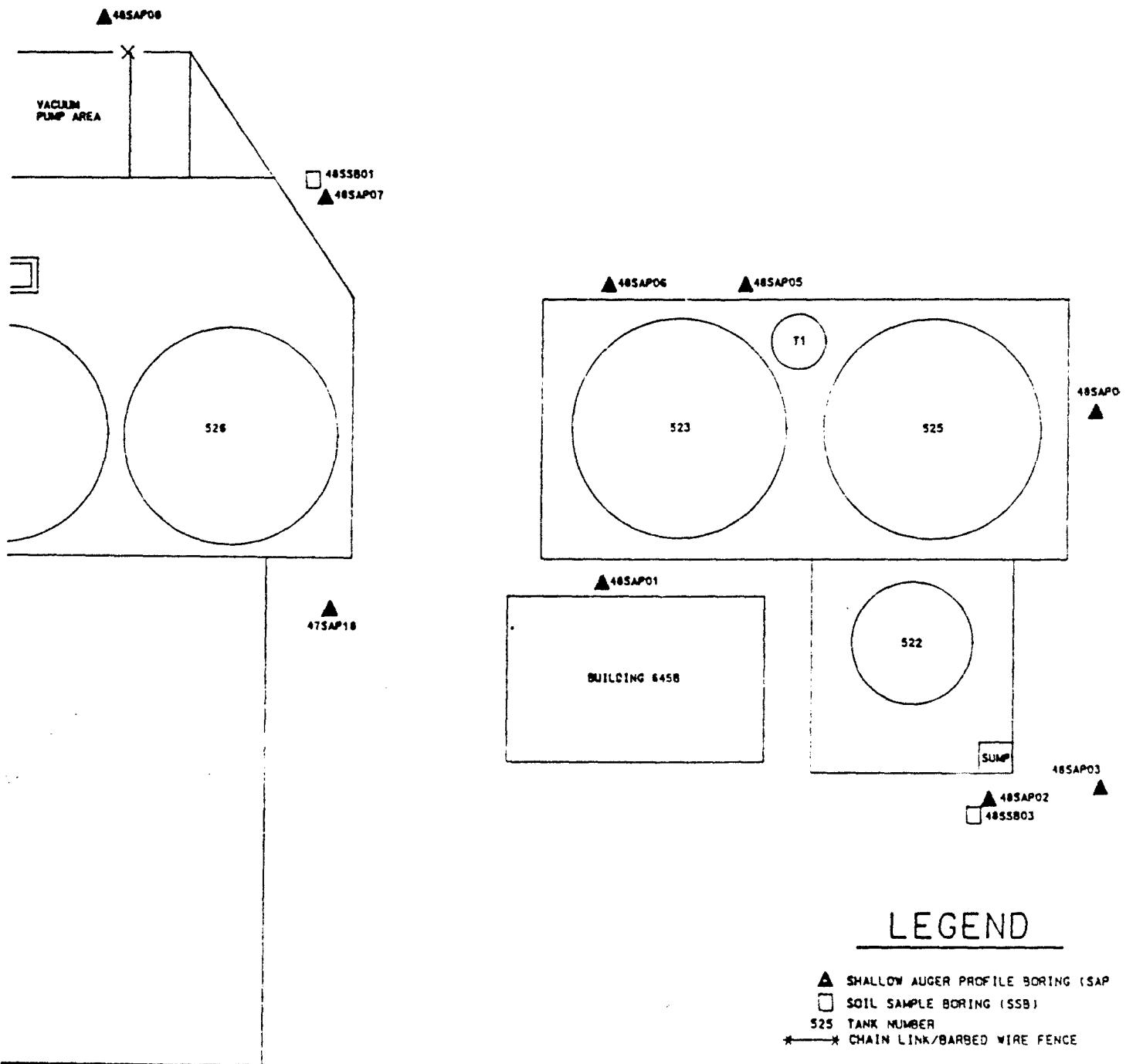


Figure C-16. Boring Location for Site 48.

C
TABLE C-6. ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES FROM SITE 48

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration ug/kg (ppb)
47SSB01	9	1,1,1-trichloroethane	24
47SSB01	80	1,1,1-trichloroethane	20
48SSB01	34	toluene	86
48SSB01	79	toluene	14
48SSB01	34	trichloroethene	28
48SSB02	44	acetone	230
48SSB03	79	1,1,1-trichloroethane	16
48SSB03	14	acetone	200
48SSB03	79	acetone	110
48SSB03	79	chloroform	13

BGS = Below ground surface.



RECOMMENDATIONS

Collect and analyze concrete and near surface soil samples for VOCs, semivolatile organic compounds, pesticides, PCBs, metals, and cyanide to further characterize the extent of contamination. Install an on-site monitoring well to determine if contaminants have migrated to groundwater. Conduct the RI of Sites 36, 47, and 48 collectively.

INFORMATION SUMMARY SHEET FOR PRL B-1

DESCRIPTION

Potential Release Location B-1 was reportedly the location of a burial pit.

GEOGRAPHIC INFORMATION

Figure C-17 shows the current features at PRL B-1 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,450/2,167,400

Area within boundaries = 103,338 square feet

Boundaries delineated using information from:
Aerial photographs.

CURRENT ACTIVITIES

The area is used by DRMO to store non-hazardous materials. Building 724 is within the location boundaries. Radian's site inspection was conducted on 7 March 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: REPORTED BURIAL PIT

Description:

McLaren reported a burial pit may have existed at PRL B-1, based on their review of aerial photographs. No evidence has been found supporting the existence of a burial pit. Aerial photographs from the 1950s show no evidence of soil disturbance.

Period of operation: Unknown

Types of materials handled:
Unknown

Specific chemicals handled:
No specific chemicals have been identified.

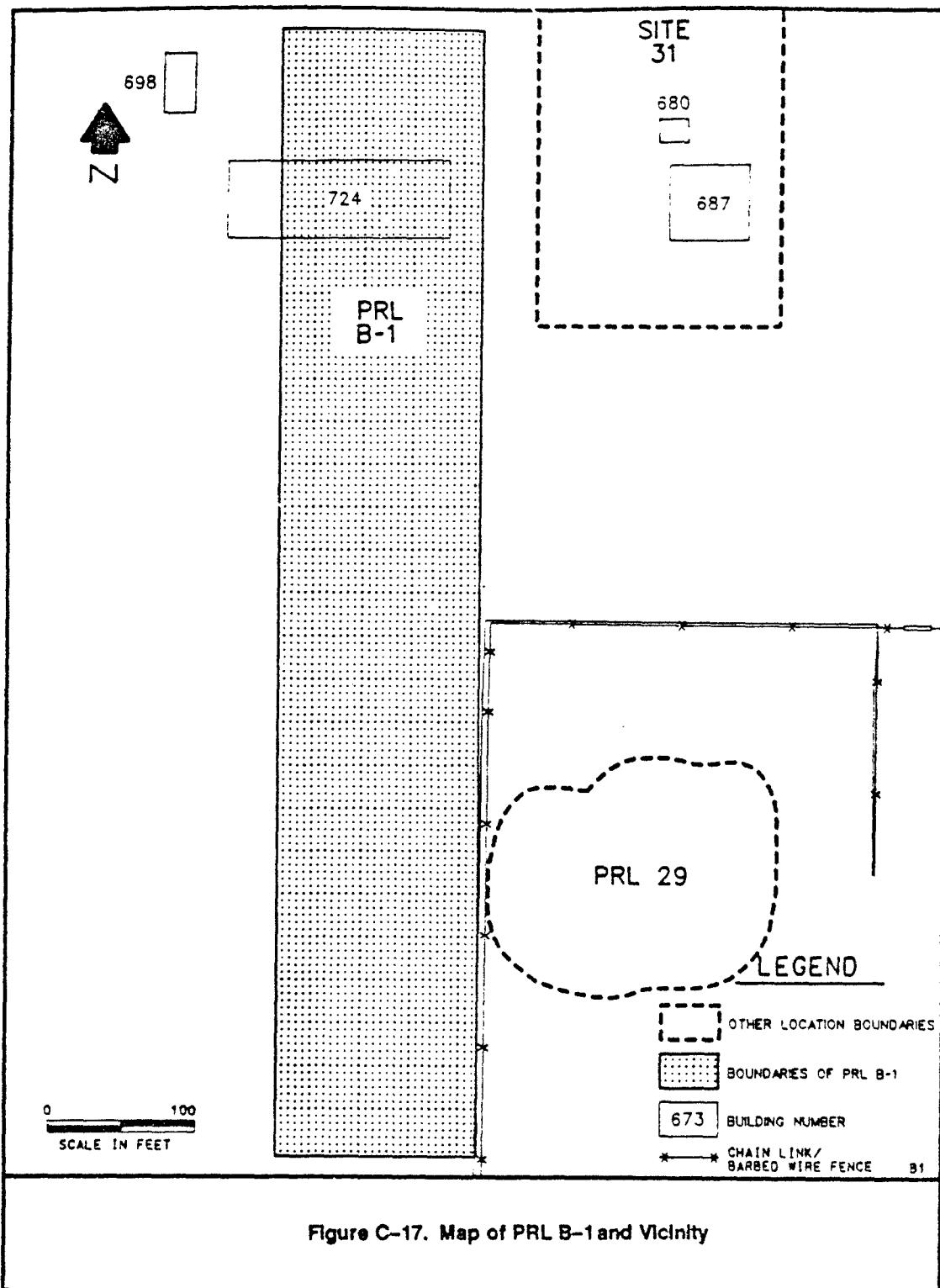
Disposal methods:
Unknown.

B. Activity/Area: OPEN STORAGE

Description:

The area has been used by DRMO since 1971 for storage. The specific materials that have been stored at the location are unknown.

Period of operation: 1971 to Present (1990)





Types of materials handled:
PCBs

Specific chemicals handled:
PCBs

Disposal methods:
Unknown.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Remove from list of Potential Release Locations. No further action is required because there is no evidence a burial pit existed at the location. The contamination that was detected in the soil is apparently related to the open storage that occurred at the location. For this reason, the contamination at the location is being investigated as part of the investigation of Study Area 12, which includes all of the area used by DRMO for open storage.



INFORMATION SUMMARY SHEET FOR PRL B-9

DESCRIPTION

Potential Release Location B-9 was reportedly the location of a burial pit.

GEOGRAPHIC INFORMATION

Figure C-18 shows the current features at PRL B-9 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,000/2,167,900

Area within boundaries = 42,140 square feet

Boundaries delineated using information from:
Aerial photographs.

CURRENT ACTIVITIES

The area consists of undeveloped grassland. Radian's site inspection was conducted on 7 March 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: REPORTED BURIAL PIT

Description:

McClaren reported a burial pit may have existed at PRL B-9, based on their review of aerial photographs. No evidence has been found supporting the existence of a burial pit. Aerial photographs from the 1950s show no evidence of soil disturbance.

Period of operation: Unknown

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

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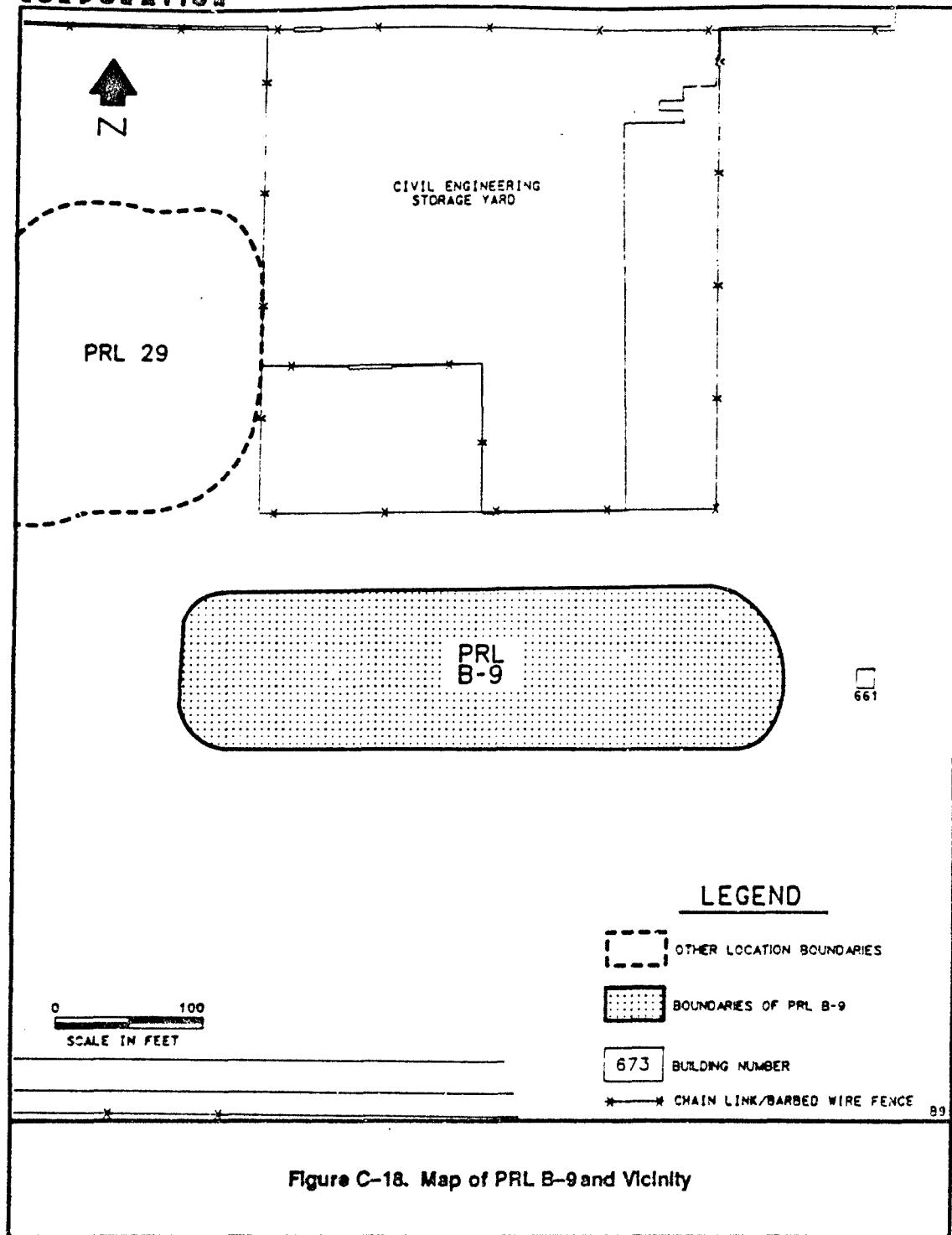


Figure C-18. Map of PRL B-9 and Vicinity



No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Remove from list of Potential Release Locations. No further action is required because there is no evidence a burial pit existed at the location and there is no indication that hazardous materials have been handled at the location.



INFORMATION SUMMARY SHEET FOR PRL L-5

DESCRIPTION

Potential Release Location L-5 is a section of the Industrial Wastewater Line.

GEOGRAPHIC INFORMATION

Figure C-19 shows the current features at PRL L-5 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,570/2,169,150

Area within boundaries = 6,381 square feet

Boundaries delineated using information from:

Previous reports.

Because this location is unstudied and the horizontal or vertical extent of any contamination that may be present is not known, location boundaries are only approximate and are intended to include only the surface trace of the IWL

CURRENT ACTIVITIES

The location consists of the section of the Industrial Wastewater Line (IWL) that runs through the central portion of Operable Unit B. The IWL within PRL L-5 transports wastewater from 10 buildings to the IWTP for treatment.

The location is in a topographic depression. Radian's site inspection was conducted on 22 March 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: IWL

Description:

The IWL collects wastewater from at least 10 buildings in OU B and transports it to the IWTP.

Period of operation: 1953 to Present (1990)

Types of materials handled:

Acids

Bases

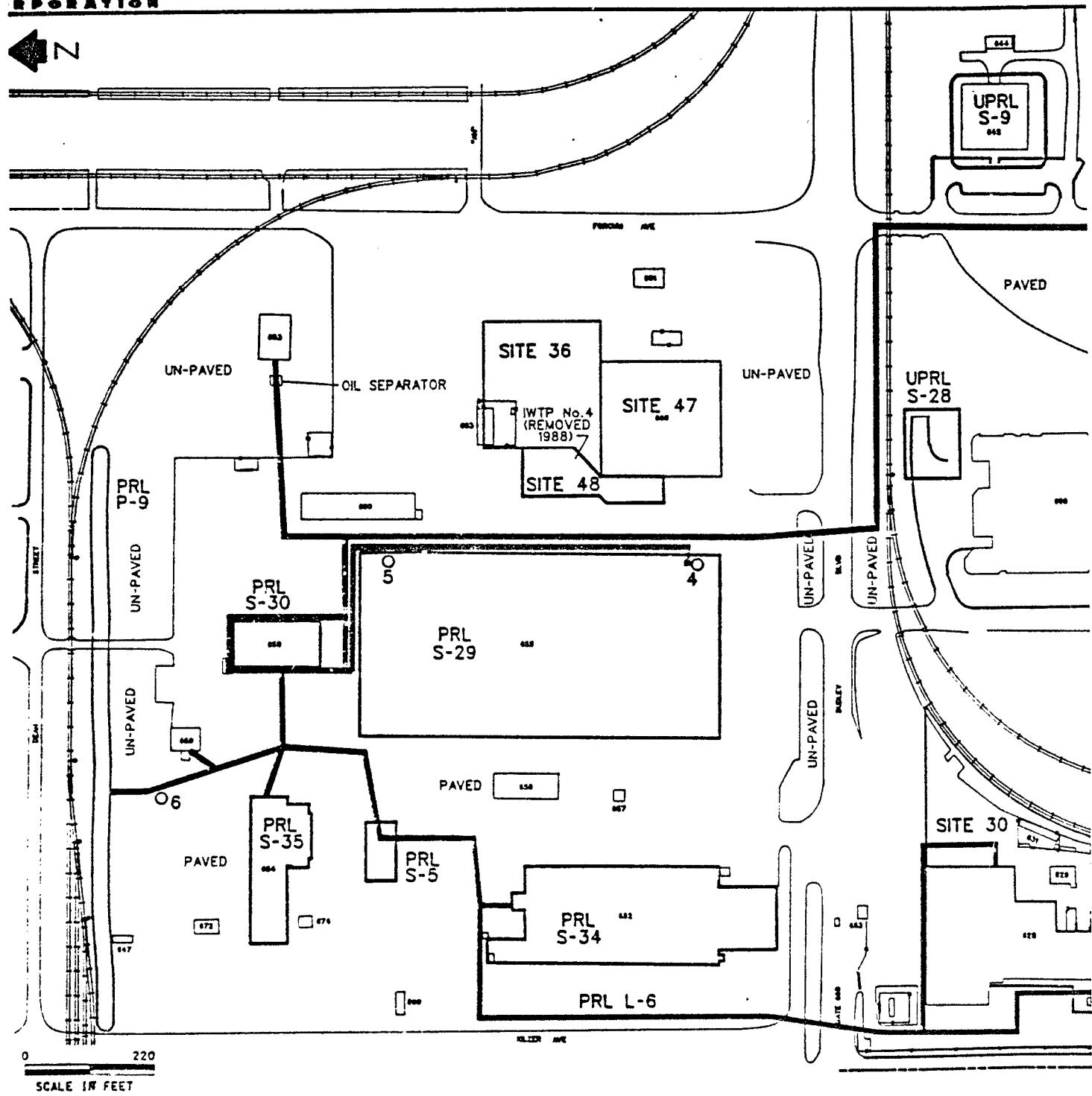
Fuels and oils

Heavy metals

Paints

Solvents

N



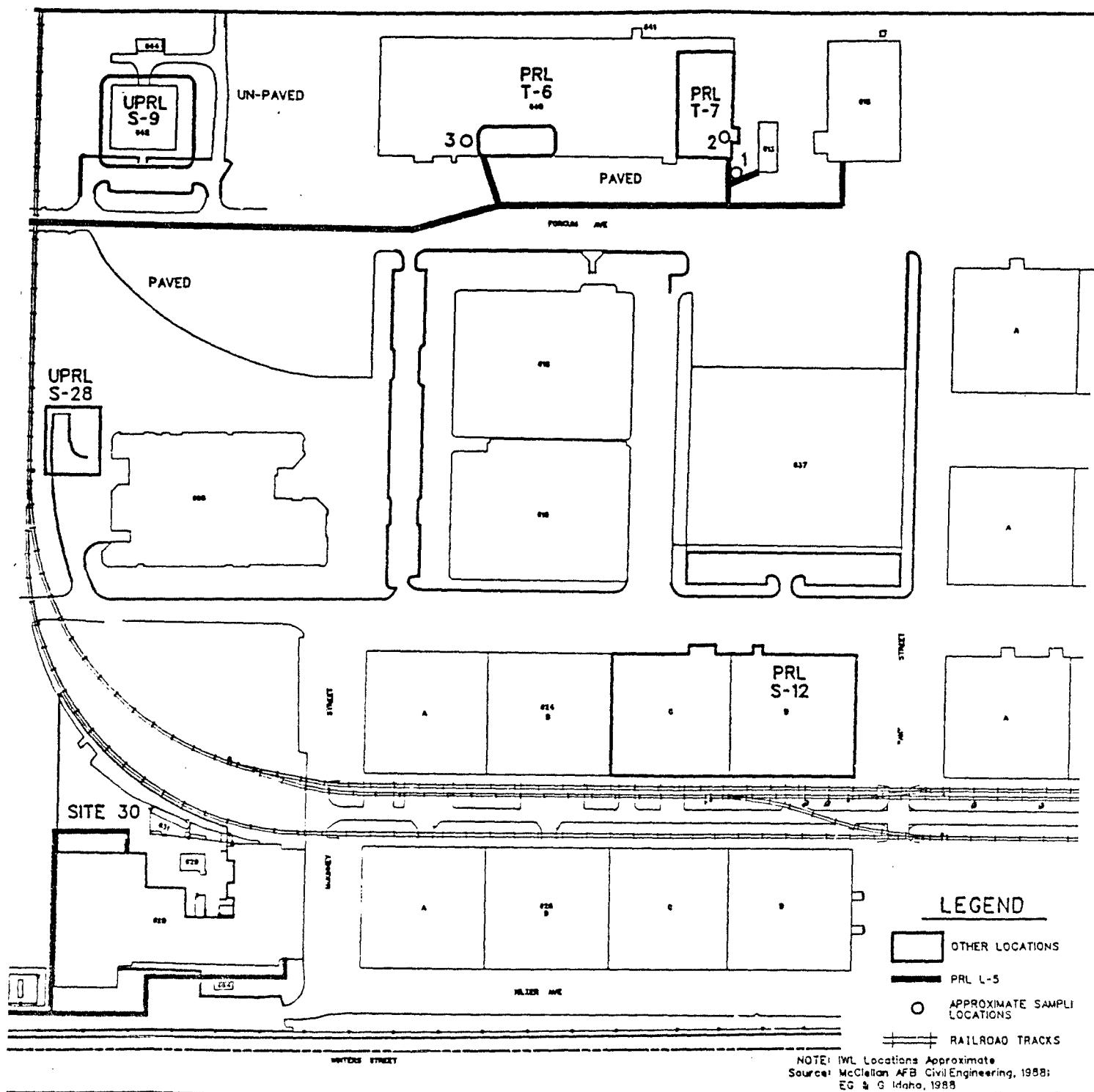


Figure C-19. Map of PRL L-5 and Vicinity

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Specific chemicals handled:

1,1,1-trichloroethane
1,1-dichloroethane
2-butanone
acetone
carbon disulfide
methylene chloride
tetrachloroethene
toluene

Disposal methods:

The wastewater passing through the IWL at PRL L-5 is eventually treated at the IWTP on the west side of the base.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Repair any remaining leaks in the IWL. Collect and analyze soil samples at the locations beneath the IWL where leaks have been identified to determine if contamination has resulted from the documented releases of industrial wastewater.



INFORMATION SUMMARY SHEET FOR PRL L-6

DESCRIPTION

Potential Release Location L-6 is a section of the Industrial Wastewater Line.

GEOGRAPHIC INFORMATION

Figure C-20 shows the current features at PRL L-6 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 357,760/2,168,680

Area within boundaries = 1,784 square feet

Boundaries delineated using information from:

Previous reports.

Because this location is unstudied and the horizontal or vertical extent of any contamination that may be present is not known, location boundaries are only approximate and are intended to include only the surface trace of the IWL.

CURRENT ACTIVITIES

The location consists of the Industrial Wastewater Line (IWL) connected to Building 628. The operations in Building 628 have ceased, however the IWL may still be functional. Radian's site inspection was conducted on 15 February 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: IWL

Description:

PRL L-6 carried wastewater from Building 628 to the IWTP. Building 628 was a research laboratory from 1957 to late 1988. Laboratory analyses performed in this building included gas analyses, applied physics-related analyses, and radiation analyses. The laboratory was a classified research facility; therefore, documentation describing specific activities within the building was not available.

Period of operation: 1957 to 1988

Types of materials handled:

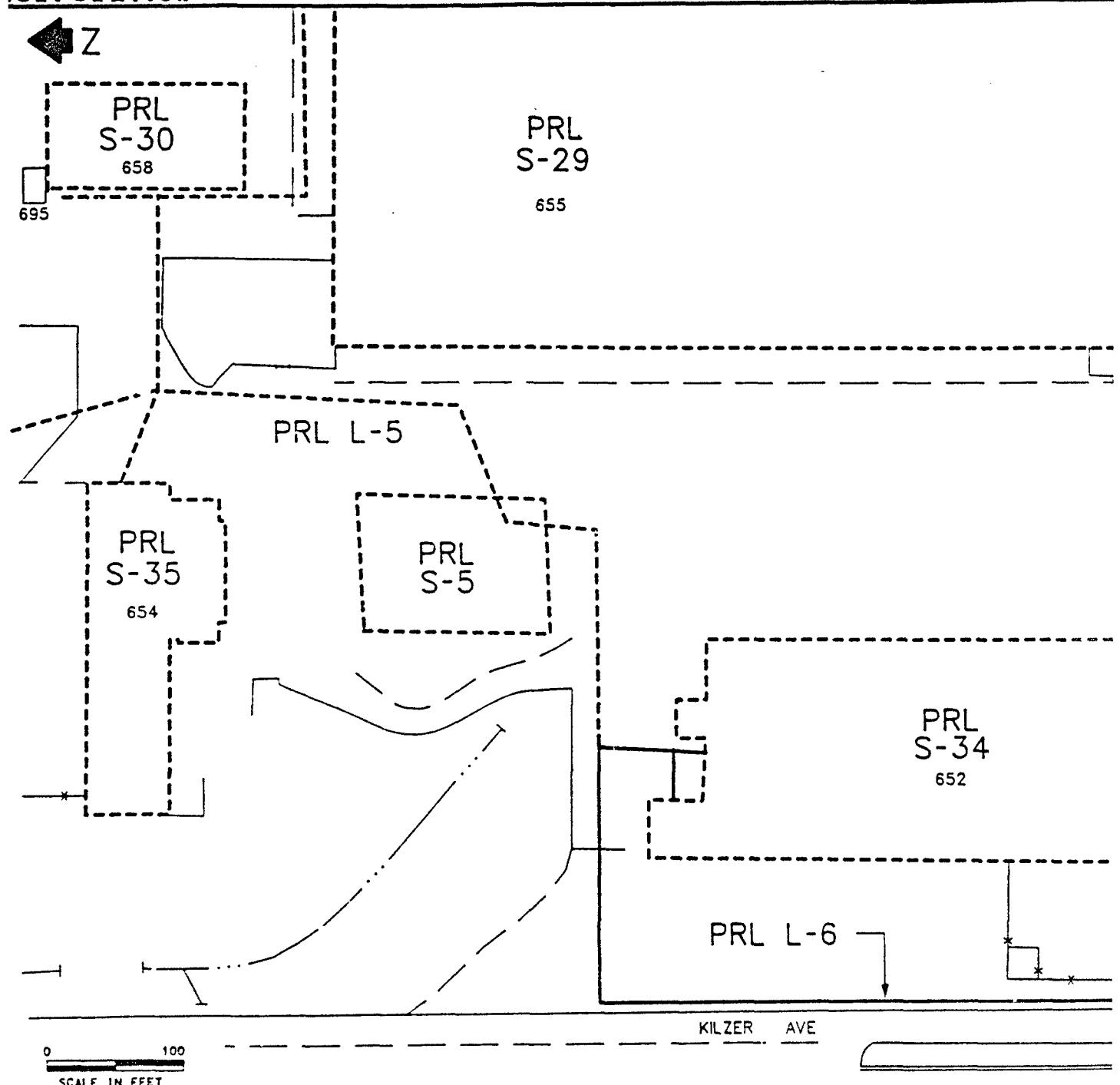
Heavy metals

Radionuclides

Semivolatile organic compounds

Volatile organic compounds

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NOTE: IWL Location is Approximate; Source: McClellan AFB Civil Engineering

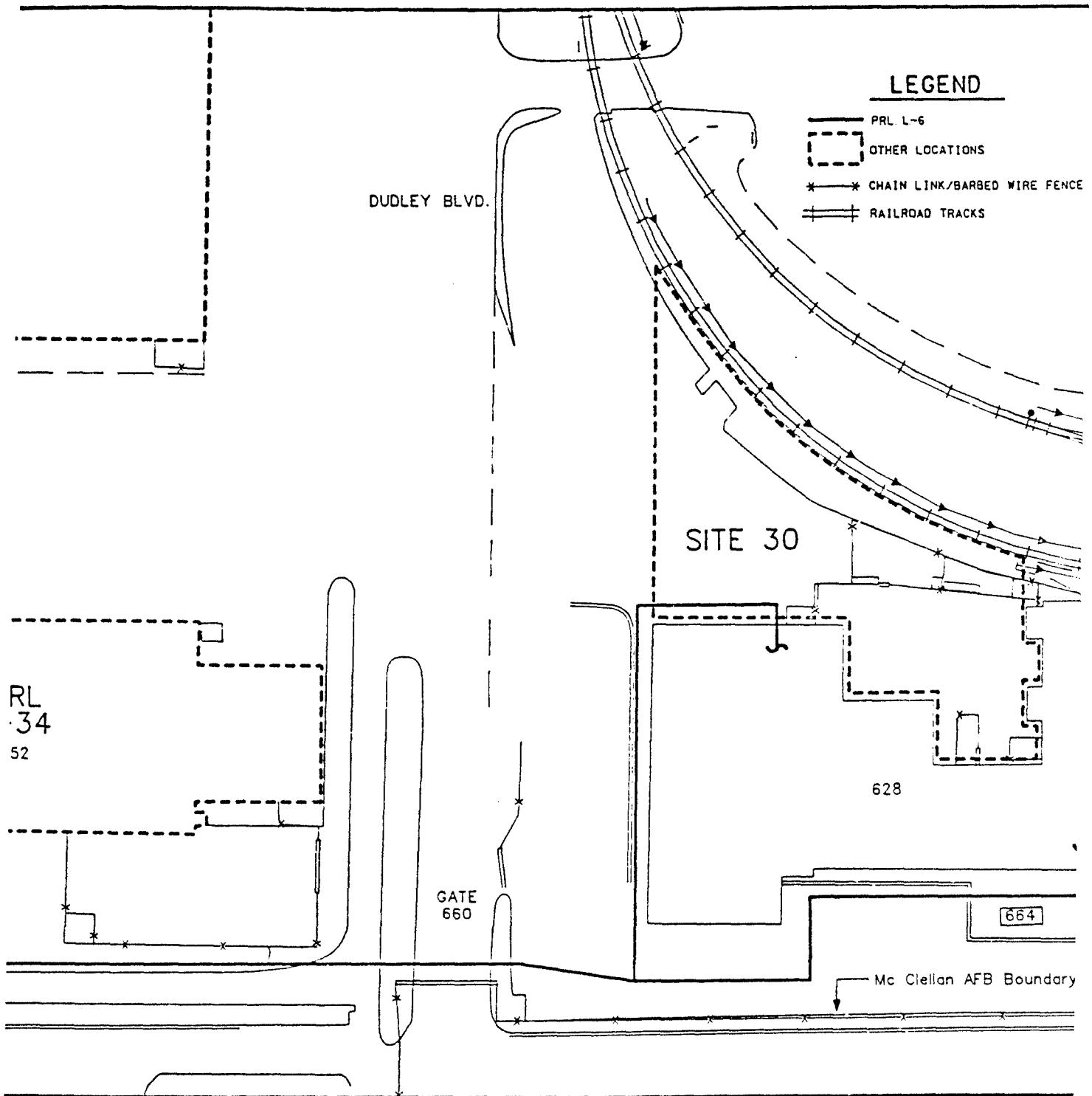


Figure C-20. Map of PRL L-6 and Vicinity

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Specific chemicals handled:

benzene
carbon tetrachloride
ethyl acetate
lanthanum
lead
methyl ethyl ketone (MEK)
methyl isobutyl ketone
molybdenum
nickel
phenol
trichloroethene
xylene, o-

Disposal methods:

Unknown.

(Possibly, IWL connected to Building 628.)

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect and analyze soil samples at the locations beneath the IWL where leaks have been identified to determine if contamination has resulted from the documented releases of industrial wastewater.

INFORMATION SUMMARY SHEET FOR PRL P-2

DESCRIPTION

Potential Release Location P-2 was reportedly the location of a possible waste pit.

GEOGRAPHIC INFORMATION

Figure C-21 shows the current features at PRL P-2 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,590/2,167,810

Area within boundaries = 707 square feet

Boundaries delineated using information from:
Aerial photographs.

CURRENT ACTIVITIES

The location is covered by asphalt. Non-hazardous scrap material is stored on the asphalt. Radian's site inspection was conducted on 15 January 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: POSSIBLE WASTE PIT

Description:

Aerial photographs are the only source of information for the location. Aerial photographs from 1962-1968 show a dark circular area that may have been a waste pit.

Period of operation: 1962 to 1968

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.
(However, fuels and oils are possible contaminants of concern.)

Disposal methods:

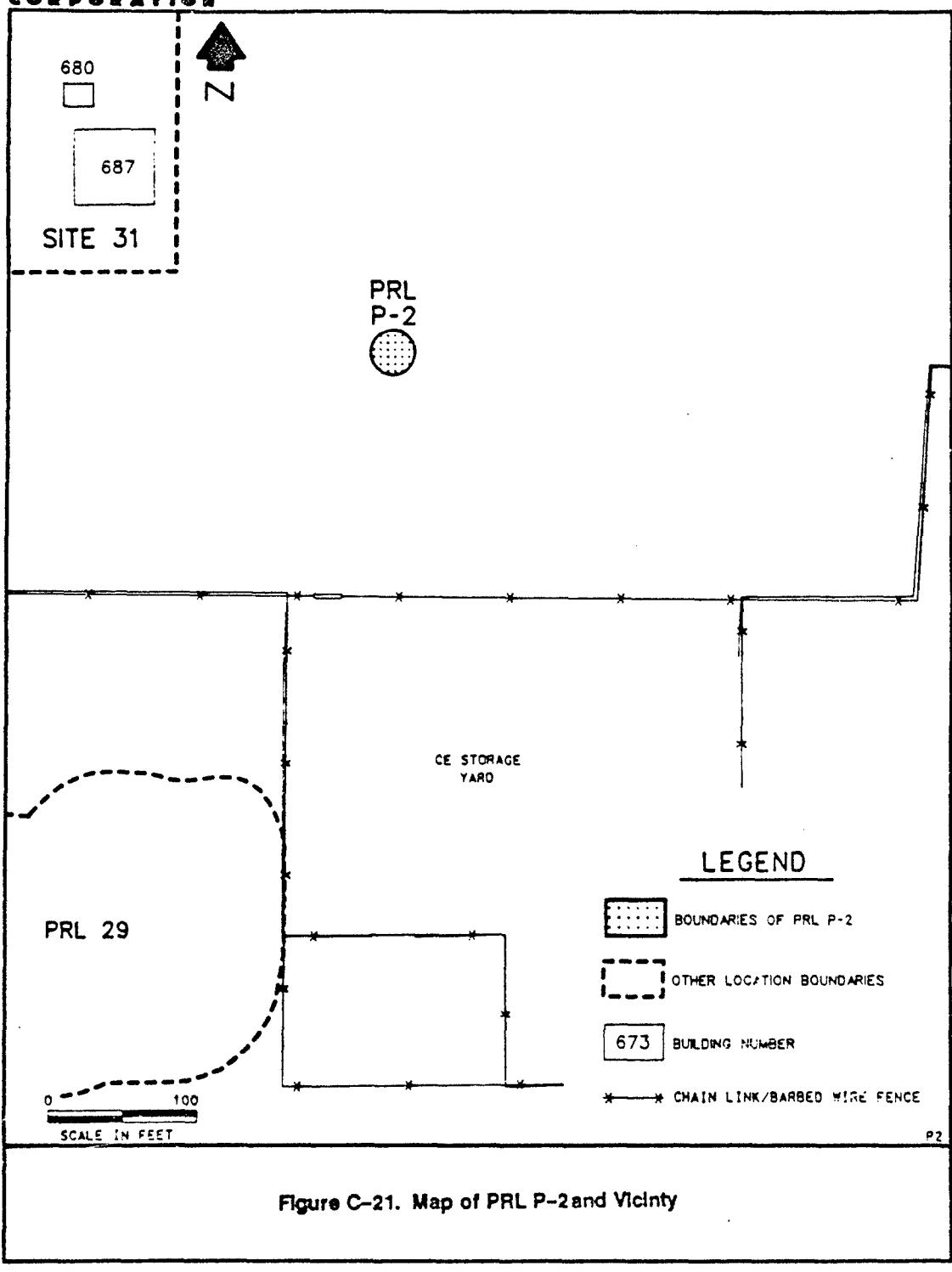
Unknown.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

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No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Soil samples be collected and analyzed to determine if contamination is present.



INFORMATION SUMMARY SHEET FOR PRL P-9

DESCRIPTION

Potential Release Location P-9 is the location of an unlined drainage ditch.

GEOGRAPHIC INFORMATION

Figure C-22 shows the current features at PRL P-9 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,760/2,169,550

Area within boundaries = 17,914 square feet

Boundaries delineated using information from:
Interviews, aerial photographs, and previous reports.

CURRENT ACTIVITIES

PRL P-9 is a ditch that presently receives storm water run-off from adjacent locations that are not considered potential release locations.

The location is in a topographic depression. Radian's site inspection was conducted on 13 March 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: DITCH

Description:

The open ditch received pretreated wastewater from IWTP #4. The outfall of the wastewater was approximately 100 feet from the eastern boundary of the ditch.

Period of operation: 1957 to 1980

Types of materials handled:

- Acids
- Bases
- Cyanide compounds
- Heavy metals
- Semivolatile organic compounds (unspecified)
- Solvents

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Wastewater was discharged to the ditch (PRL P-9) and then eventually flowed to Magpie Creek.

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© MW 117 ☐ MW 120

DEAN

AVENUE

647

672

659

695

658

S F

654 PRL
S-35

67-4

PRL
S-5

PRL
S-29

699

100
IN FEET

100
IN FEET

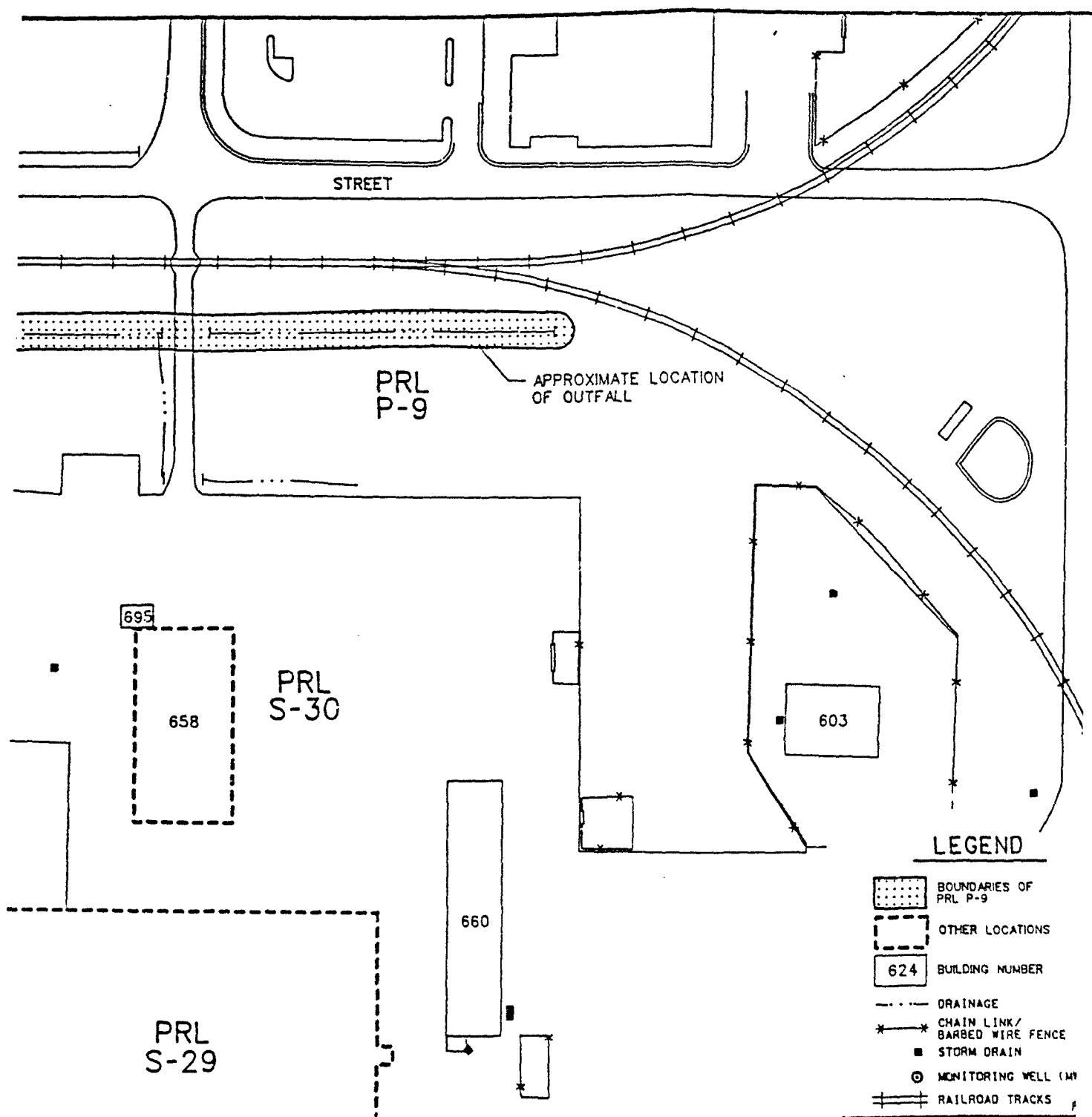


Figure C-22. Map of PRL P-9 and Vicinity



PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Screen the surface using a FID. Collect and analyze soil samples for metals, volatile and semivolatile organic compounds, and pH. Collect and analyze surface water samples from the ditch.



INFORMATION SUMMARY SHEET FOR PRL S-5

DESCRIPTION

Potential Release Location S-5 is the location of former Industrial Wastewater Treatment Plant No. 2.

GEOGRAPHIC INFORMATION

Figure C-23 shows the current features at PRL S-5 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,400/2,168,980

Area within boundaries = 5,047 square feet

Boundaries delineated using information from:
Aerial photographs and construction drawings.

CURRENT ACTIVITIES

The area of PRL S-5 is a paved parking area for cargo containers and tractor trailers. Radian's site inspection was conducted on 8 March 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: FLOTATION TANK

Description:

The aeration/flootation treatment process was contained within a building. Effluent from the equalizer tank was mixed with lime, passed through an air saturation tank, then was mixed with alum before entering the flotation tank.

Period of operation: 1956 to 1974

Types of materials handled:

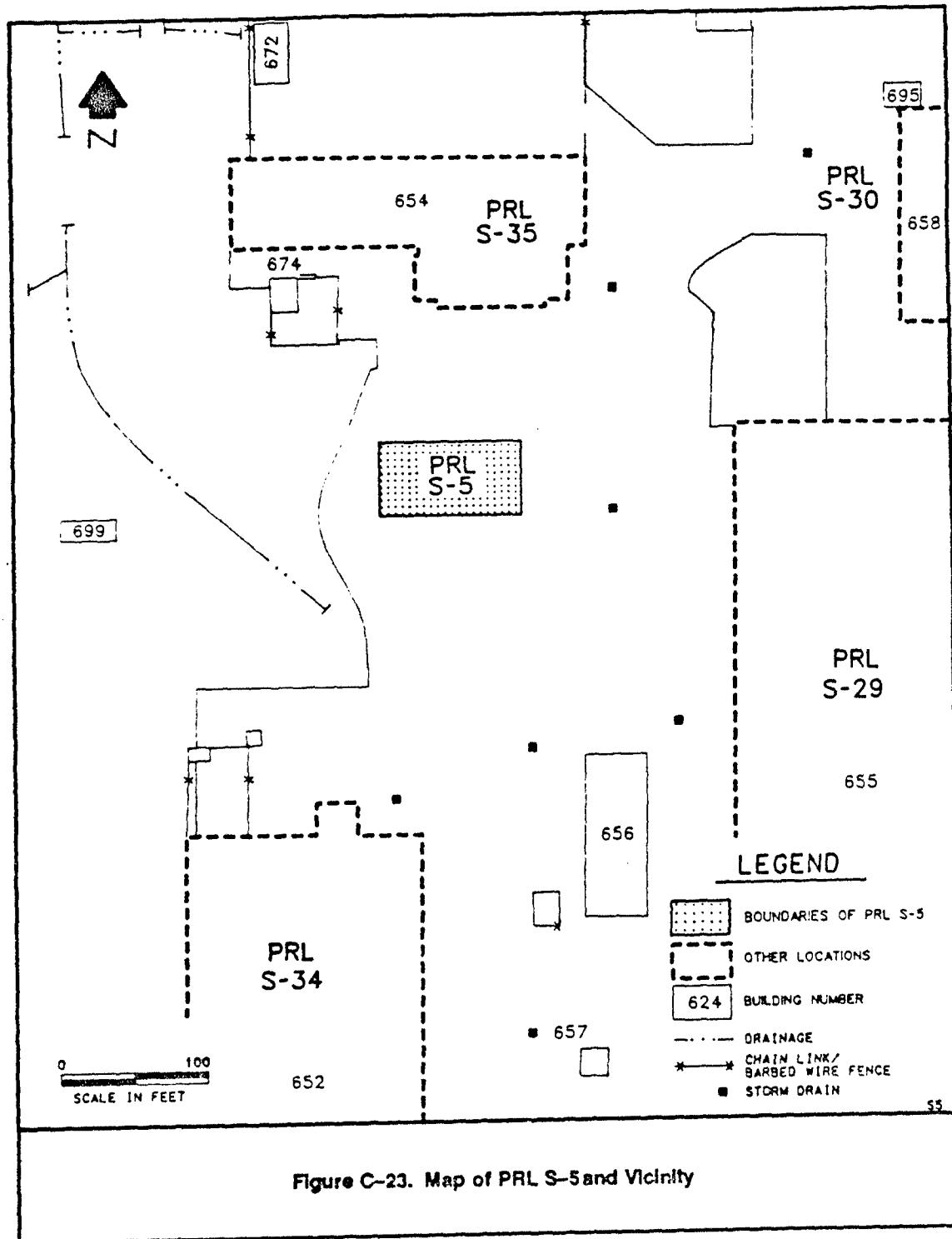
Fuels and oils
Heavy metals
Paints
Solvents

Specific chemicals handled:

aluminum sulfate
calcium oxide

Disposal methods:

Sludges and float were discharged to a dumpster prior to disposal. The effluent from the flotation tank was discharged to an unlined drainage ditch.





B. Activity/Area: EQUALIZER TANK

Description:

The equalizer tank at IWTP No. 2 was an open-top, above-ground tank where hexavalent chromium was reduced to trivalent chromium. Oils were skimmed from the surface, and sludge was scraped from the bottom of the tank.

Period of operation: 1956 to 1974

Types of materials handled:

- Fuels and oils
- Heavy metals
- Paints
- Solvents

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Wastes skimmed from the surface and scraped from the bottom of the tank were discharged to dumpsters prior to disposal. The effluent from the equalizer tank flowed to a flotation tank.

C. Activity/Area: IWTP NO. 2 SUMP

Description:

This unit was a collection sump for IWTP #2. Oils were skimmed off the top and drained to a dumpster. The effluent was pumped to an equalizer tank.

Period of operation: 1956 to 1974

Types of materials handled:

- Acids
- Fuels and oils
- Heavy metals

Specific chemicals handled:

- ferrous sulfate
- sulfuric acid

Disposal methods:

Waste was pumped to an equalizer tank. Oils were skimmed and drained to dumpster prior to disposal.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Determine if remedial actions were performed when IWTP No. 2 was dismantled. Screen the soil gas and collect and analyze soil samples for metals, volatile and semivolatile organic compounds, and pH if warranted based on the results of the soil gas screening or visual observations.

INFORMATION SUMMARY SHEET FOR PRL S-12

DESCRIPTION

Potential Release Location S-12 is the location of Buildings 624C and 624D which were used to store materials containing polychlorinated biphenyls.

GEOGRAPHIC INFORMATION

Figure C-24 shows the current features at PRL S-12 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 356,350/2,169,190

Area within boundaries = 85,697 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

The location boundaries surround Buildings 624C and 624D. The southeastern section of Building 624D is used to store materials containing PCBs. The remainder of Building 624D and all of Building 624C is used for non-hazardous storage. Radian's site inspection was conducted on 10 February 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: UNBERMED PCB STORAGE

Description:

The building was constructed in the 1940s. During the 1970s transformers and capacitors were stored in the building. In 1979, approximately 200 gallons of PCB-contaminated oil spilled in Building 624C and promptly cleaned up.

Period of operation: 1970 to 1980

Types of materials handled:

PCBs

Specific chemicals handled:
PCBs

Disposal methods:

Wastes are picked up by DRMO.

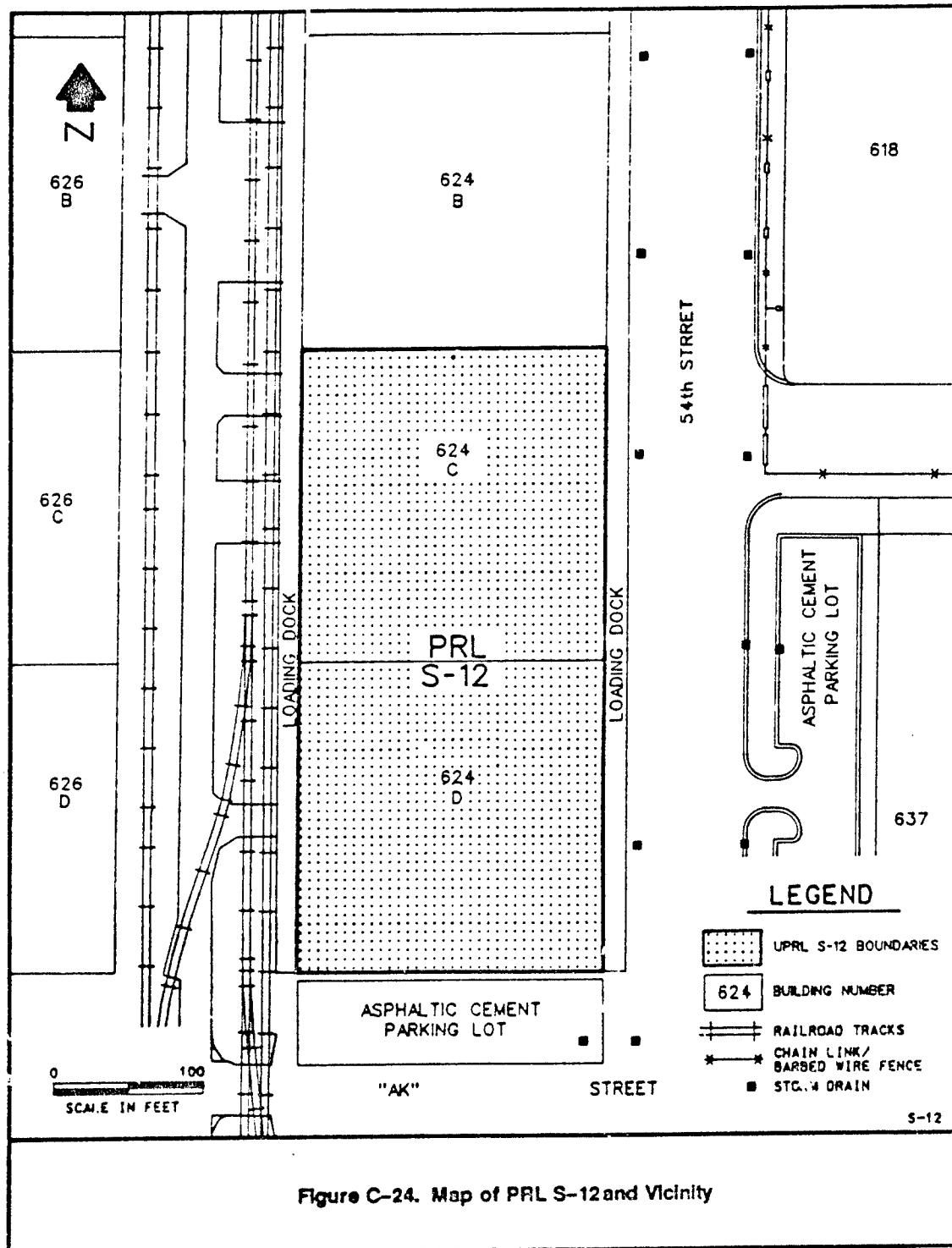


Figure C-24. Map of PRL S-12 and Vicinity



B. Activity/Area: BERMED PCB STORAGE

Description:

After the PCB spill occurred in Building 624C in 1979, a bermed storage area for materials containing PCBs was built.

Period of operation: 1980 to Present (1990)

Types of materials handled:
PCBs

Specific chemicals handled:
PCBs

Disposal methods:
Wastes are picked up by DRMO.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Remove from list of Potential Release Locations. No further action is required because there is no indication that contaminants were released to the environment.



INFORMATION SUMMARY SHEET FOR PRL S-13

DESCRIPTION

Potential Release Location S-13 is the location of a hazardous waste storage lot.

GEOGRAPHIC INFORMATION

Figure C-25 shows the current features at PRL S-13 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,790/2,166,320

Area within boundaries = 113,849 square feet

Boundaries delineated using information from:
Previous reports and aerial photographs.

CURRENT ACTIVITIES

Storage Lot No. 3 is a hazardous materials storage area. Liquid and solid materials including acids, bases, corrosives, PCB's, lead batteries, and flammable materials are stored in Building 709 and Building 727 on site.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 20 March 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: BUILDING 727

Description:

Building 727 is used to store flammable materials such as solvents and paints.

Period of operation: 1981 to Present (1990)

Types of materials handled:

Paints

Solvents

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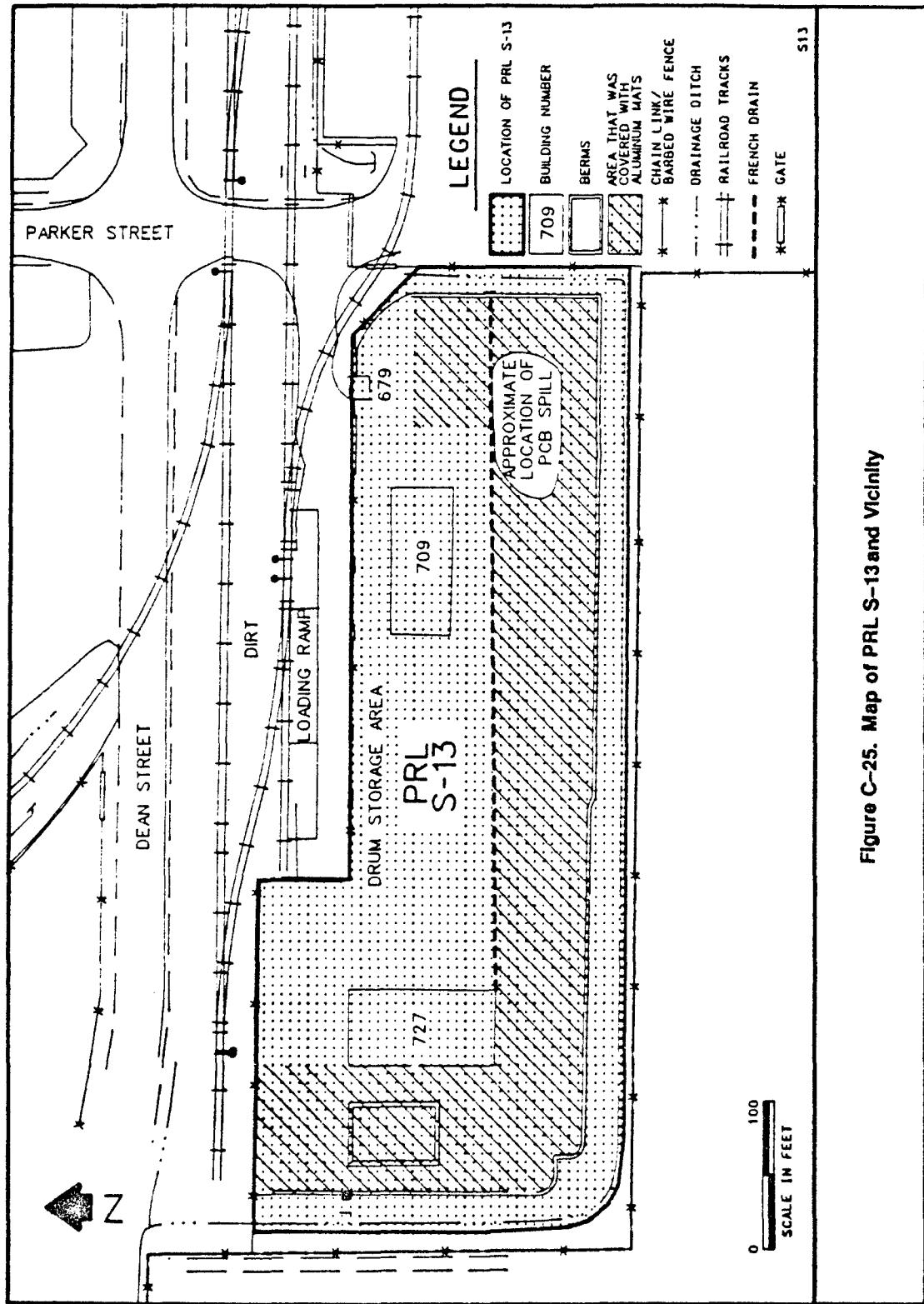


Figure C-25. Map of PRL S-13 and Vicinity



Specific chemicals handled:

1,1,1,2-tetrachloroethane	dichloromethane
1,1,1-trichloroethane	diethyl ether
1,1,2,2-tetrachloroethane	ethyl acetate
1,1,2-trichloro-1,2,2-trifluoroethane	ethyl benzene
1,1,2-trichloroethane	ethylene glycol monoethyl ether
2-nitropropane	isobutanol
acetone	methanol
benzene	methyl ethyl ketone peroxide
butanol	methyl isobutyl ketone
carbon disulfide	nitrobenzene
carbon tetrachloride	pyridine
chlorobenzene	tetrachloroethene
cresol	toluene
cyclobenzene	toluene diisocyanate
cyclohexane	trichloroethene
cyclohexanone	trichlorofluoromethane
dichlorobenzene, o-	xylene

Disposal methods:

Wastes are taken off site for disposal.

B. Activity/Area: BUILDING 709

Description:

Building 709 is used for storage of hazardous materials such as acids, bases, corrosives, poisons, and PCBs.

Period of operation: 1981 to Present (1990)

Types of materials handled:

PCBs
Acids
Bases
Other materials

Specific chemicals handled:

calcium cyanide
chlordane
ethyl ester
mercury
potassium cyanide
strychnine

Disposal methods:

Wastes are taken off site for disposal.

C. Activity/Area: OUTDOOR STORAGE

Description:

Lot 3 has been used for storage since 1955, until Buildings 707 and 727 were built in 1981; all materials were stored outside. Currently, there is a bermed area which is used for storage of hazardous materials when the building is full. Empty drums, scrap metal, and lead batteries are also stored on the asphalt lot.

Period of operation: 1955 to Present (1990)



Types of materials handled:

Acids
Bases
Cyanide compounds
Fuels and oils
Heavy metals
Paints
Solvents

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Wastes are disposed of off site.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

Contaminated soil and asphalt were removed as part of the cleanup of a PCB spill that occurred on 13 May 1982 on the eastern portion of the site.

RECOMMENDATIONS

Collect and analyze soil samples from beneath the asphalt and adjacent to ditches and sumps to determine if contamination has resulted from the documented releases of chemicals.



INFORMATION SUMMARY SHEET FOR PRL S-28

DESCRIPTION

Potential Release Location S-28 is reportedly the location of a former oil and paint storage area.

GEOGRAPHIC INFORMATION

Figure C-26 shows the current features at PRL S-28 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 357,450/2,169,650

Area within boundaries = 1,252 square feet

Boundaries delineated using information from:
Previous reports and aerial photographs.

CURRENT ACTIVITIES

The area of PRL S-28 is a grass covered area north of Building 600. Radian's site inspection was conducted on 6 February 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: PAINT AND OIL STORAGE

Description:

Oil and paint were reportedly stored in Building 615. This information has not been confirmed. Subsequently, the information in this summary pertaining to oil and paint storage is unconfirmed.

Period of operation: 1968 to 1987

Types of materials handled:

Fuels and oils
Paints

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

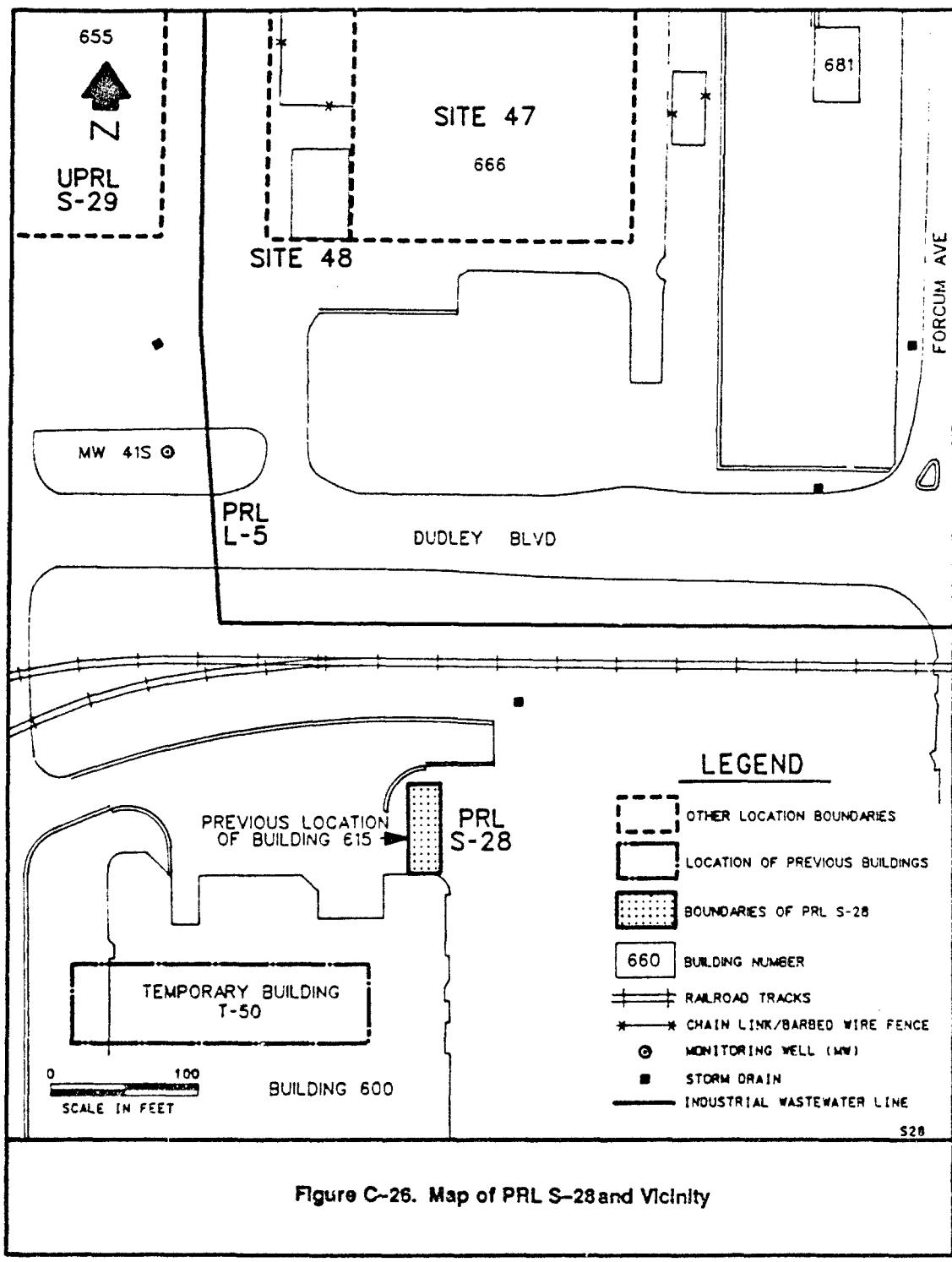
Unknown.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

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No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Screen the surface using FIDs and PIDs. Collect and analyze soil samples if warranted by the screening results.



INFORMATION SUMMARY SHEET FOR PRL S-29

DESCRIPTION

Potential Release Location S-29 was reportedly the location of a polychlorinated biphenyl storage area.

GEOGRAPHIC INFORMATION

Figure C-27 shows the current features at PRL S-29 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,150/2,169,330

Area within boundaries = 180,177 square feet

Boundaries delineated using information from:
Previous reports.

CURRENT ACTIVITIES

Building 655 is used to paint vans and to clean and repair electronic components. The three paint booths generate water-based and enamel paint wastes. Radian's site inspection was conducted on 9 February 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: FUEL TANK SERVICE

Description:

The fuel tanker servicing operation generated waste oil and contaminated fuel that was sent to the Facility 346 A-B oil skimmer tank. A small amount of fuel was washed down a drain to the IWL that led to the IWTP.

Period of operation: Unknown

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

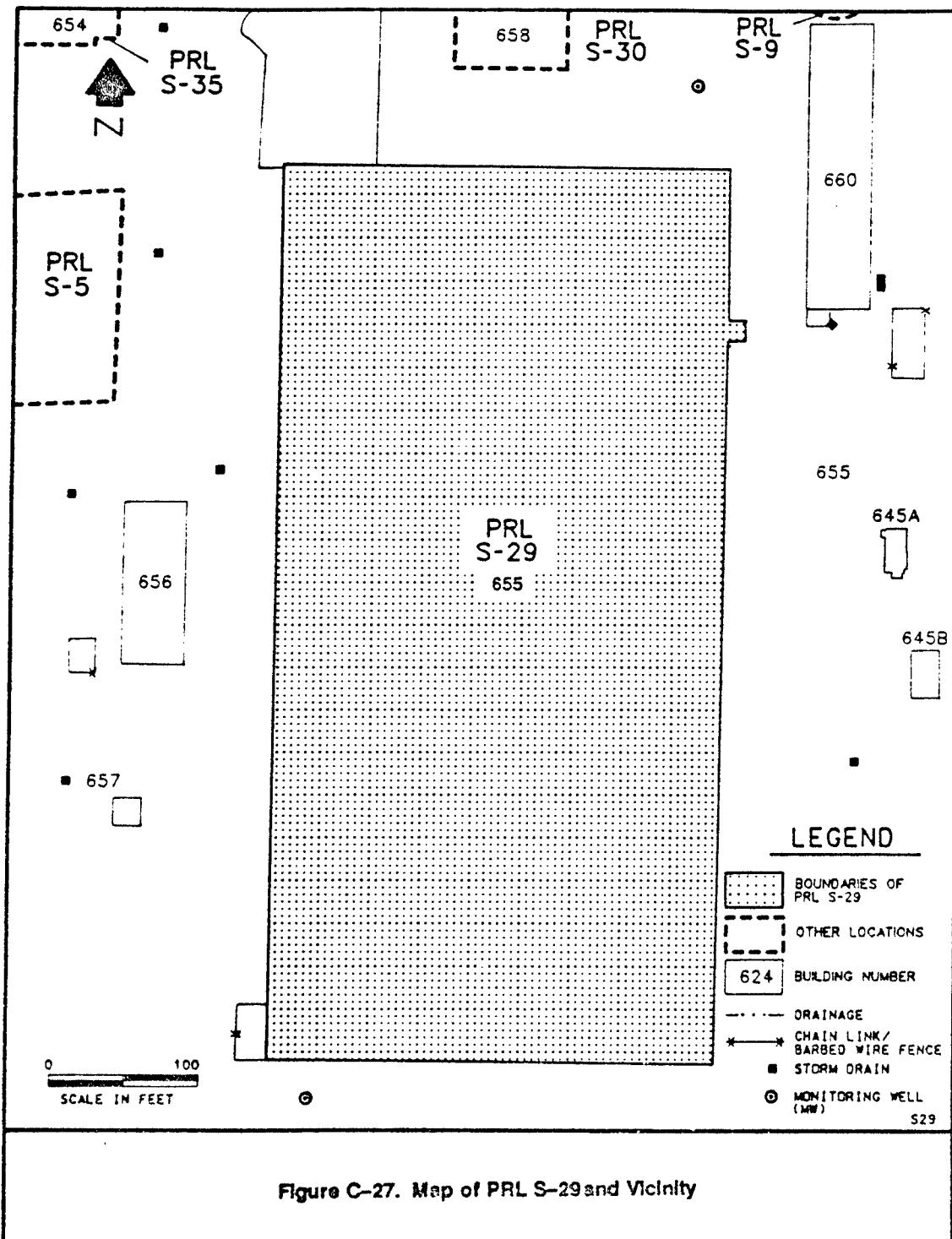
Wastes was sent to the Facility 346 A-B oil skimmer tank or was washed down a drain that was connected to IWL.

B. Activity/Area: PAINTING BOOTH

Description:

Painting of vehicles and aircraft parts was reported to have been performed in Building 655.

Period of operation: Unknown





Types of materials handled:
Paints

Specific chemicals handled:
No specific chemicals have been identified.

Disposal methods:
Waste paint and solvents were put in containers and sent to the hazardous waste storage facility 1086 to await proper contractor disposal.

C. Activity/Area:PCB STORAGE

Description:
Dirty oil was stored in Building 655 in a 1300-gallon bowser that was shared with Smith Engineering, an operation and maintenance contractor.

Period of operation: Unknown

Types of materials handled:
PCBs
Fuels and oils

Specific chemicals handled:
4-chlorophenyl benzenesulfonate
PCBs

Disposal methods:
The bowser was continuously emptied by Civil Engineering at the Facility 346 A-B oil skimmer storage tank.

D. Activity/Area:RADAR VAN REPAIR

Description:
Radar van repair shop reportedly having transformer and semiconductor service.

Period of operation: Unknown

Types of materials handled:
PCBs

Specific chemicals handled:
PCBs

Disposal methods:
Unknown.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.



No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Evaluate the potential for discharge of fluids from floor drains and subsurface piping to determine if contaminants have been released. No further action unless the piping is found to lack integrity.



INFORMATION SUMMARY SHEET FOR PRL S-30

DESCRIPTION

Potential Release Location S-30 is the location of a paint stripping washrack at Building 658.

GEOGRAPHIC INFORMATION

Figure C-28 shows the current features at PRL S-30 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,580/2,169,330

Area within boundaries = 11,087 square feet

Boundaries delineated using information from:
Previous reports.

CURRENT ACTIVITIES

The enclosed area of Building 658 is used as a media blast paint stripping area. A hot paint stripping tank is also in use. In the open area, six spray wands are used for cleaning and stripping parts. Radian's site inspection was conducted on 8 January 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: WASHRACK OPERATION (1972-76)

Description:

The washrack has operated since 1953. However, specific information is available only for operations since 1972. Between 1972 and 1976, the washrack operations included solvent and steam cleaning of parts as well as the chemical removal of paint from parts. The tanks used during this time period included: two hot paint stripping tanks containing butyl cellosolve, three other paint removers tanks, a 4,500-gallon paint stripping solvent storage tank, and several 180-gallon portable solvent tanks.

Period of operation: 1972 to 1976

Types of materials handled:

Fuels and oils
Solvents

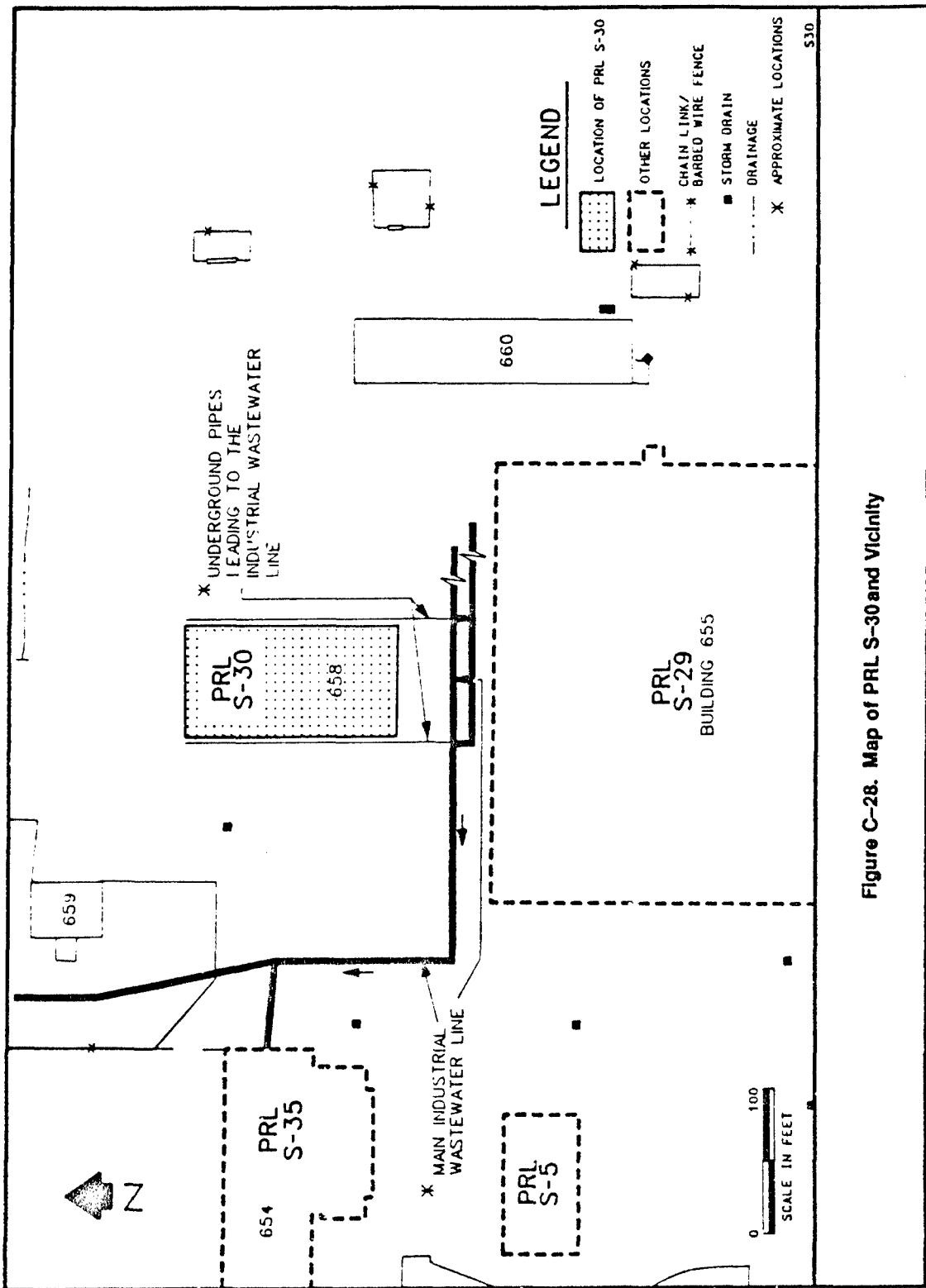


Figure C-28. Map of PRL S-30 and Vicinity

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Specific chemicals handled:

1,1,2,2-tetrachloroethene
ammonia
aniline
chromium
cresol
ethanolamine
ethyl acetate
ethyl alcohol
ethylene glycol
hydrofluoric acid
isopropyl alcohol
methanol
methyl ethyl ketone (MEK)
methylene chloride
phenol
sodium chromate
sulfuric acid
toluene

Disposal methods:

The floor of the washrack contains 44 floor drains spaced approximately 15 feet apart. Two parallel trench drains run down the center of the washrack. Pipes transport wastes from each of the 44 floor drains to the two center trenches. At the northern end of the center trenches is a catch basin. The catch basin is currently connected to the IWL, but it is unknown when the connection was made.

B. Activity/Area: WASHRACK OPERATION (1980-86)

Description:

The southwest corner of Building 658 was enclosed and used for storing barrels of solvent and paint stripping solutions. The remainder of the area was open and was used for cleaning and paint stripping operations.

Period of operation: 1980 to 1986

Types of materials handled:

Paints
Solvents



Specific chemicals handled:

1,1,2,2-tetrachloroethene
ammonia
aniline
chromium
cresol
ethanolamine
ethyl acetate
ethyl alcohol
hydrofluoric acid
isopropyl alcohol
methanol
methyl ethyl ketone (mek)
methylene chloride
phenol
sodium chromate
toluene

Disposal methods:

Wastewater is collected in the drain system described in the washrack (1972-1976) unit. Paint chips and other wastes collected in the catch basin as well as the solution in the paint stripping dip tanks are disposed off-site.

C. Activity/Area: WASHRACK OPERATION (CURRENT)

Description:

Approximately half of Building 658 is enclosed and is used to house the mediablast paint stripping area. In the open area, spray wands are used for cleaning and stripping parts. A hot paint stripping tank is still in use.

Period of operation: 1986 to Present (1990)

Types of materials handled:

Paints
Solvents

Specific chemicals handled:

ammonia
chromate
chromic acid
cresol
ethanolamine
ethyl alcohol
methanol
methyl ethyl ketone (mek)
methylene chloride
phenol
phosphoric acid
sodium chromate



Disposal methods:

Building 658 contains a system of 44 interior drains, 2 central trench drains, 3 perimeter drains and 3 catch basins to collect wastewater. These drains discharge to the IWL. Solid wastes that collect in the catch basins are disposed of off-site. A trench drain runs along the north, east, and west perimeter of the washrack floor to prevent any liquid wastes from flowing beyond the cement pad of the washrack.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Inspect the integrity of the trenches, catch basin, and underground piping leading to trenches or to the IWL to determine if past releases have occurred. Conduct a soils investigation if leaks are found.



INFORMATION SUMMARY SHEET FOR PRL S-33

DESCRIPTION

Potential Release Location S-33 was reportedly the historical location of a chemical waste storage facility at Building 786A.

GEOGRAPHIC INFORMATION

Figure C-29 shows the current features at PRL S-33 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,630/2,165,860

Area within boundaries = 84,136 square feet

Boundaries delineated using information from:
Previous reports.

CURRENT ACTIVITIES

Building 786A is presently used for depot stock control. The building contains offices and a boiler room, and is used for furniture storage. Radian's site inspection was conducted on 28 April 1989. Cracks in the foundation of the building were noted during the inspection.

HISTORICAL ACTIVITIES

A. Activity/Area: CHEMICAL STORAGE

Description:

PRL S-33 was reportedly the location of a chemical and chemical waste storage facility at Building 786A. Some chemical materials were also used at PRL S-33 in 1984.

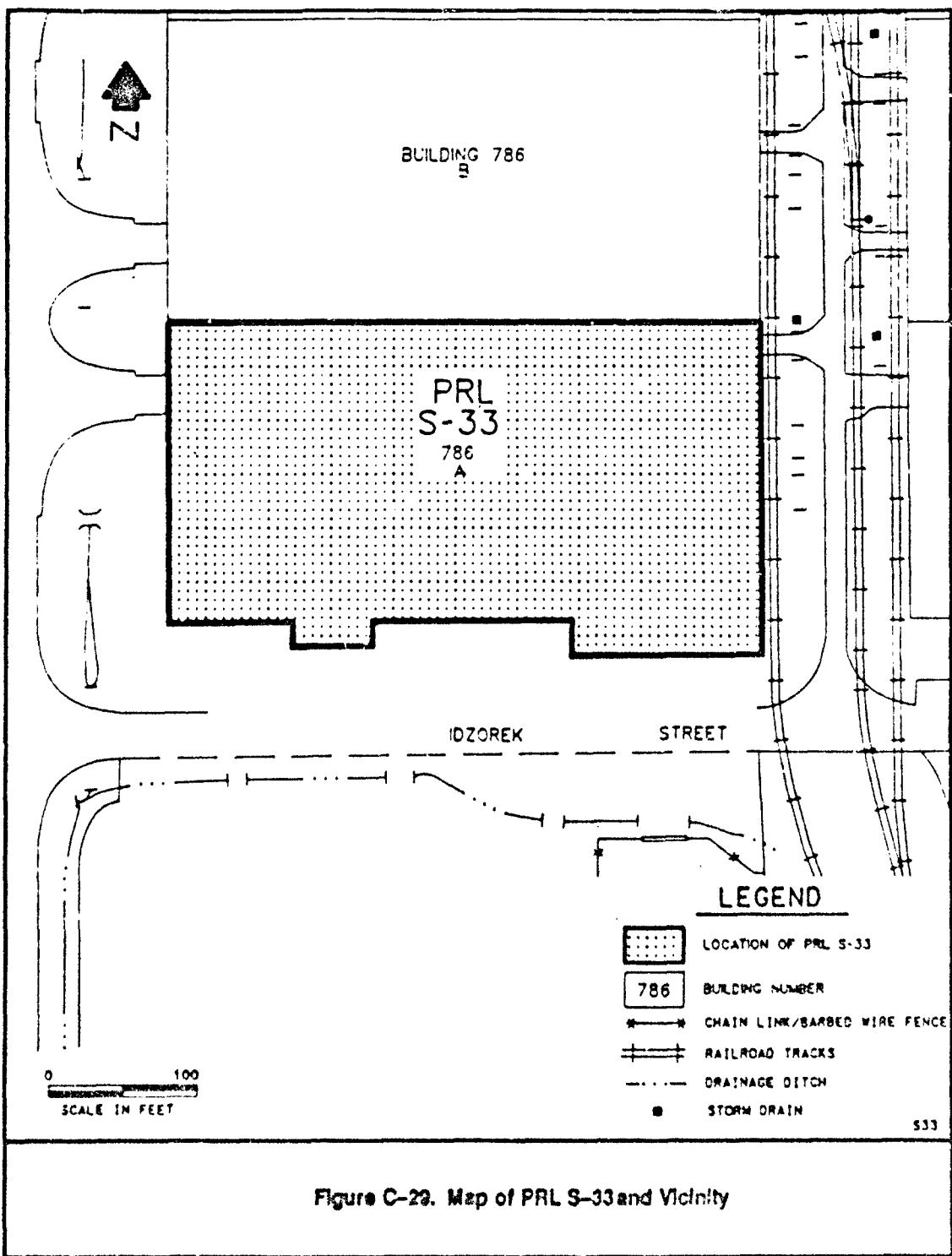
Period of operation: Unknown to 1984

Types of materials handled:

- Acids
- Bases
- Fuels and oils
- Paints
- Semivolatile organic compounds (unspecified)
- Solvents
- Volatile organic compounds (unspecified)

Specific chemicals handled:

- 1,1,1-trichloroethane
- methanol
- trichloroethene





Disposal methods:

Emulsion degreaser was disposed of through the industrial wasteline. All other materials used at Building 786A were consumed during use. No wastes were produced at Building 786A during storage or chemical and chemical wastes.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Screen cracks in foundation and southern and western loading docks for organic vapors. Collect and analyze soil samples if warranted by the screening results.

INFORMATION SUMMARY SHEET FOR PRL S-34**DESCRIPTION**

Potential Release Location S-34 is the location of a degreaser and paint spray booth at Building 652.

GEOGRAPHIC INFORMATION

Figure C-30 shows the current features at PRL S-34 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 357,970/2,168,880

Area within boundaries = 62,104 square feet

Boundaries delineated using information from:
Interviews and previous reports.

CURRENT ACTIVITIES

Building 652 is being refurbished for a new operation. Building 652 will become the location of a repair and manufacturing operation for the servicing and repairing of wing tanks. Based on the location visit, the following observations were noted: The degreaser operation is no longer used and the paint spray booth has been removed. The exterior washrack structures that were located along the northern, eastern, and western perimeters of the building have been removed. Siding material and new windows are being installed. Other refurbishing activities are planned, but the details were not available. The pits and sumps were not inspected at the time of location visit.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 9 February 1989.

HISTORICAL ACTIVITIES**A. Activity/Area: DEGREASER****Description:**

Building 652 was part of a special equipment repair center and was the location for cleaning and repairing of automotive equipment with solvents and automotive maintenance products.

Period of operation: Unknown**Types of materials handled:**

Fuels and oils
Solvents

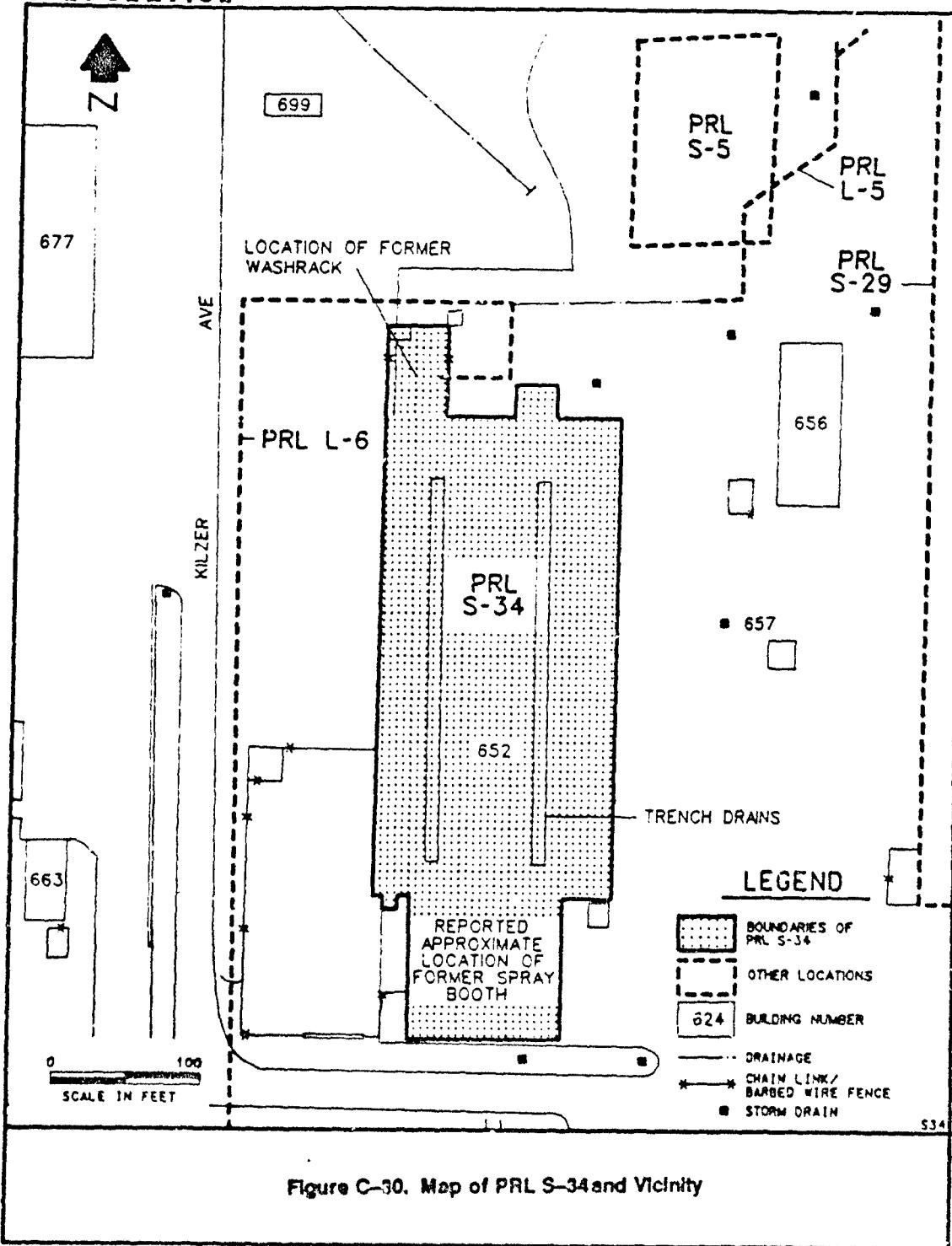
Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

A degreaser pit located outside the northern wall of Building 652.

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B. Activity/Area:PAINT SPRAY BOOTH

Description:

Building 652 contained a paint spray booth. No other information was available regarding the materials used.

Period of operation: 1949 to Unknown

Types of materials handled:

Paints

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

C. Activity/Area:WASHRACK

Description:

Washracks for steam cleaning and washing air conditioning units were located along the northern, eastern, and western perimeters of Building 652. No other information is available.

Period of operation: Unknown

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Wastewater flows into drains connected to the IWL.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Evaluate the integrity of the pits, sumps, trenches, and pipelines. Collect and analyze soil samples to determine if contaminants have been released to the environment.

INFORMATION SUMMARY SHEET FOR PRL S-35

DESCRIPTION

Potential Release Location S-35 is the location of Building 654 and the solvent spray booth that operated within the building.

GEOGRAPHIC INFORMATION

Figure C-31 shows the current features at PRL S-35 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,590/2,168,950

Area within boundaries = 18,739 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

Building 654 is primarily used to repair ground power equipment.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 8 March 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: ABOVEGROUND TANKS

Description:

In 1971, a 500-gallon antifreeze tank, a 1000-gallon diesel fuel tank, and a 500-gallon oil tank were placed on a concrete pad 30 feet west of Building 654. A 20-inch high berm surrounded the concrete pad. The antifreeze, fuel, and oil were dispensed through hoses on the south side of the concrete pad.

Period of operation: 1971 to Unknown

Types of materials handled:

Fuels and oils
Semivolatile organic compounds (unspecified)

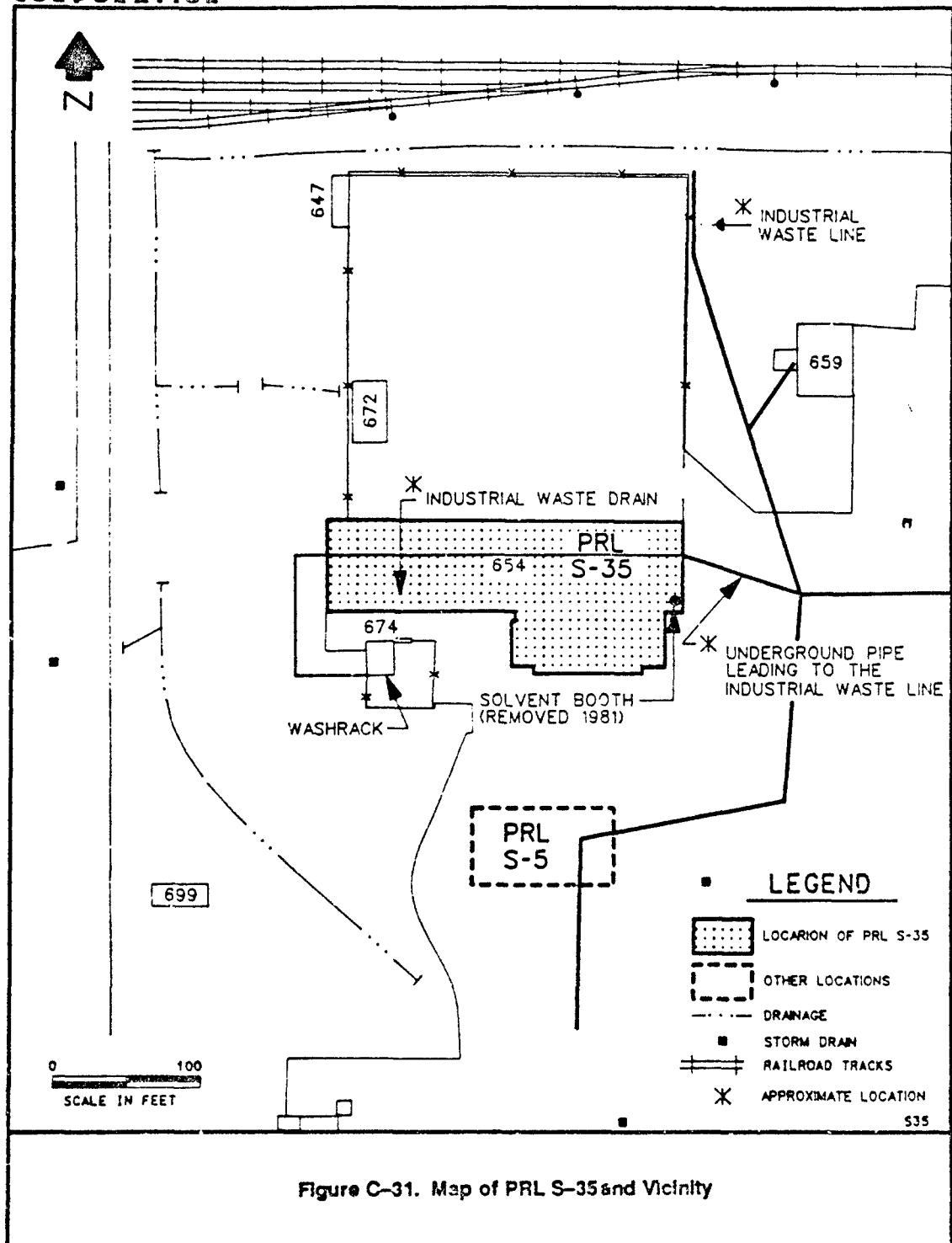
Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

B. Activity/Area: SOLVENT SPRAY BOOTH



Description:

Small parts were sprayed with Stoddard Solvent inside the booth.

Period of operation: Unknown to 1981

Types of materials handled:

Solvents

Specific chemicals handled:

Stoddard Solvent

Disposal methods:

Vapors produced from booth activities were vented through a duct to the outside. Used solvent was collected in a holding tank and recycled for reuse in the booth. When the solvent became unusable it was drained into a barrel and disposed of into an above-ground tank.

C. Activity/Area: BUILDING 654

Description:

Building 654 houses the ground power equipment repair operations. The building has undergone at least 2 renovations since its construction in 1965, but the operations performed in the building have remained essentially the same.

Period of operation: 1965 to Present (1990)

Types of materials handled:

Fuels and oils

Other materials

Solvents

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Wastes discharge to a trench drain located in the center and running the length of the building. The drain connects to the IWL.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.



RECOMMENDATIONS

Investigate the soils beneath and adjacent to the trench drain of Building 654 and the IWL leading from Building 654. Evaluate the integrity of the underground drain and piping and repair if necessary.

INFORMATION SUMMARY SHEET FOR PRL S-41**DESCRIPTION**

Potential Release Location S-41 is the location of Apron 7905 (Mat K) where aircraft fueling and defueling operations take place.

GEOGRAPHIC INFORMATION

Figure C-32 shows the current features at PRL S-41 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,440/2,168,250

Area within boundaries = 196,647 square feet

Boundaries delineated using information from:

Location visit.

EM previously designated the location as "Site S41". The underground pipes outside the perimeter of the location are not included in the location boundaries.

CURRENT ACTIVITIES

PRL S-41 surrounds Mat K (Apron 7905), which is used for aircraft fuel testing, fuel tank purging, refueling, and defueling. The apron is paved with asphalt and concrete. Radian's site inspection was conducted on 11 April 1989.

HISTORICAL ACTIVITIES**A. Activity/Area: JET FUELING AND DEFUELING****Description:**

This area is used for aircraft fueling and defueling. Some airplanes which are to large to fit into the hangers surrounding the site are serviced on PRL S-41.

Period of operation: 1955 to Present (1990)

Types of materials handled:

Fuels and oils

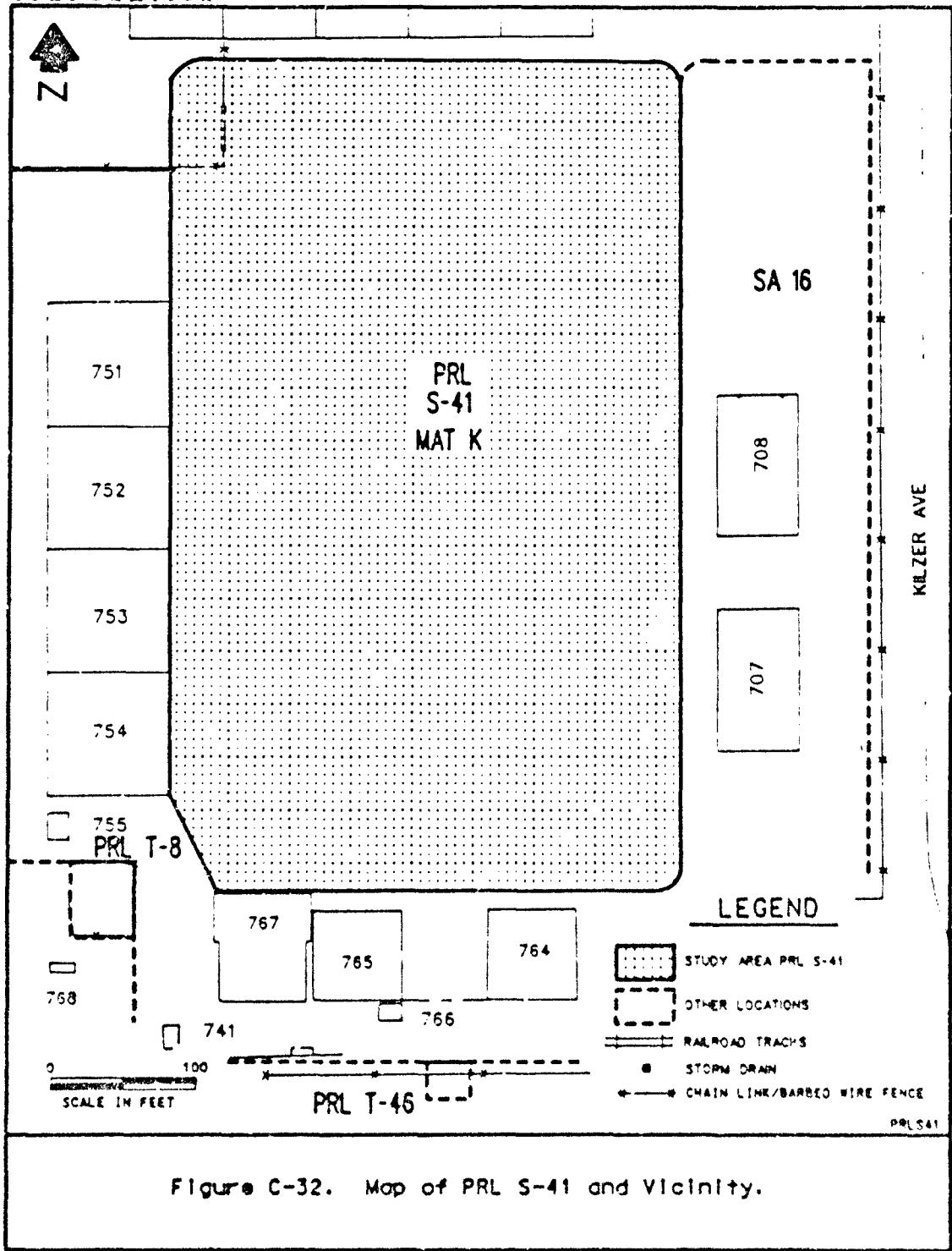
Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Any spills of jet fuel or oil are immediately cleaned up with a steam cleaner. Most of the runoff is collected by drains connected to the IWL located off-site. A small amount drains into the drainage ditch along Dean Street.

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PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

No further action is required because there is no evidence of contamination and there is a low potential for migration of any contamination that may have occurred.

INFORMATION SUMMARY SHEET FOR PRL T-8

DESCRIPTION

Potential Release Location T-8 is the location of three underground fuel storage tanks adjacent to Apron 7905 (Mat K).

GEOGRAPHIC INFORMATION

Figure C-33 shows the current features at PRL T-8 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,150/2,168,130

Area within boundaries = 2,236 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

Three underground fuel tanks (Tanks 756 A, B, & C) are located within the location boundaries. The tanks store jet fuel and are connected via pipelines to the hangars that surround Mat K. The pipelines and hangars are being investigated as Study Area 16. A leak detection system for the tanks was recently installed. Radian's site inspection was conducted on 11 April 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: UNDERGROUND FUEL TANKS

Description:

Three underground fuel tanks with capacities of 15,000, 15,000, and 20,000 gallons were constructed in 1968. When tested in 1986, the two 15,000 gallon tanks were found to be leaking. The 20,000 gallon tank has not been leak-tested.

Period of operation: 1968 to Present (1990)

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The waste fuel is periodically pumped into a tanker truck to be recycled.

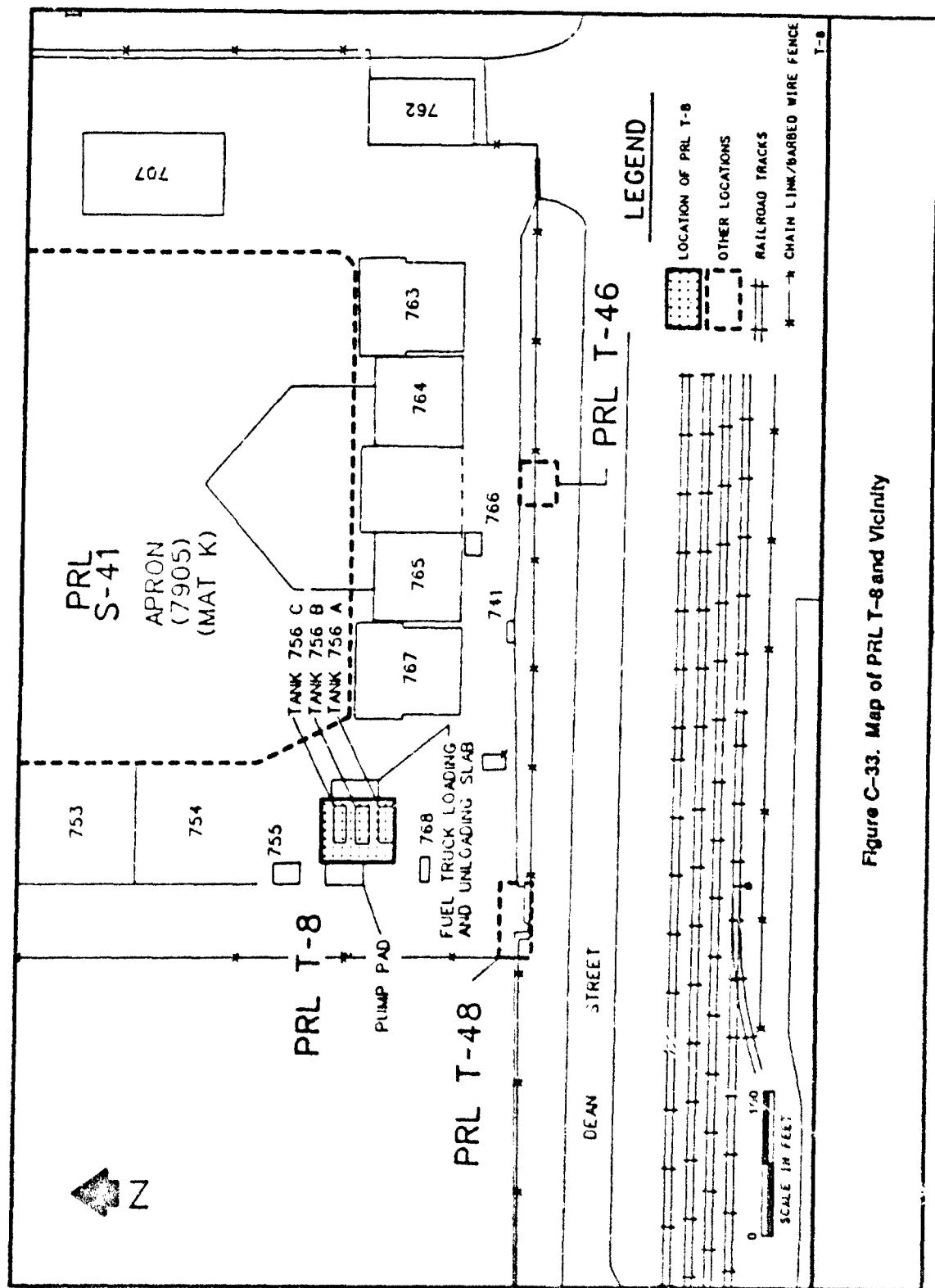


Figure C-33. Map of PRL T-8 and Vicinity



PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect and analyze soil samples soil to determine the extent of contamination has resulted from the documented releases caused by leaks in the tanks.

INFORMATION SUMMARY SHEET FOR PRL T-45

DESCRIPTION

Potential Release Location T-45 is the location of an abandoned concrete oil-water separator tank.

GEOGRAPHIC INFORMATION

Figure C-34 shows the current features at PRL T-45 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,880/2,168,180

Area within boundaries = 1,272 square feet

Boundaries delineated using information from:

Location visit.

The location boundaries include the oil-water separator and the immediate surroundings.

CURRENT ACTIVITIES

PRL T-45 is the location of an abandoned 2000 gallon concrete oil-water separator tank northwest of Mat K. A discharge pipe leads from the oil-water separator to Magpie Creek, located 25 feet to the north. The tank is no longer used. Radian's site inspection was conducted on 11 April 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: OIL/WATER SEPARATOR

Description:

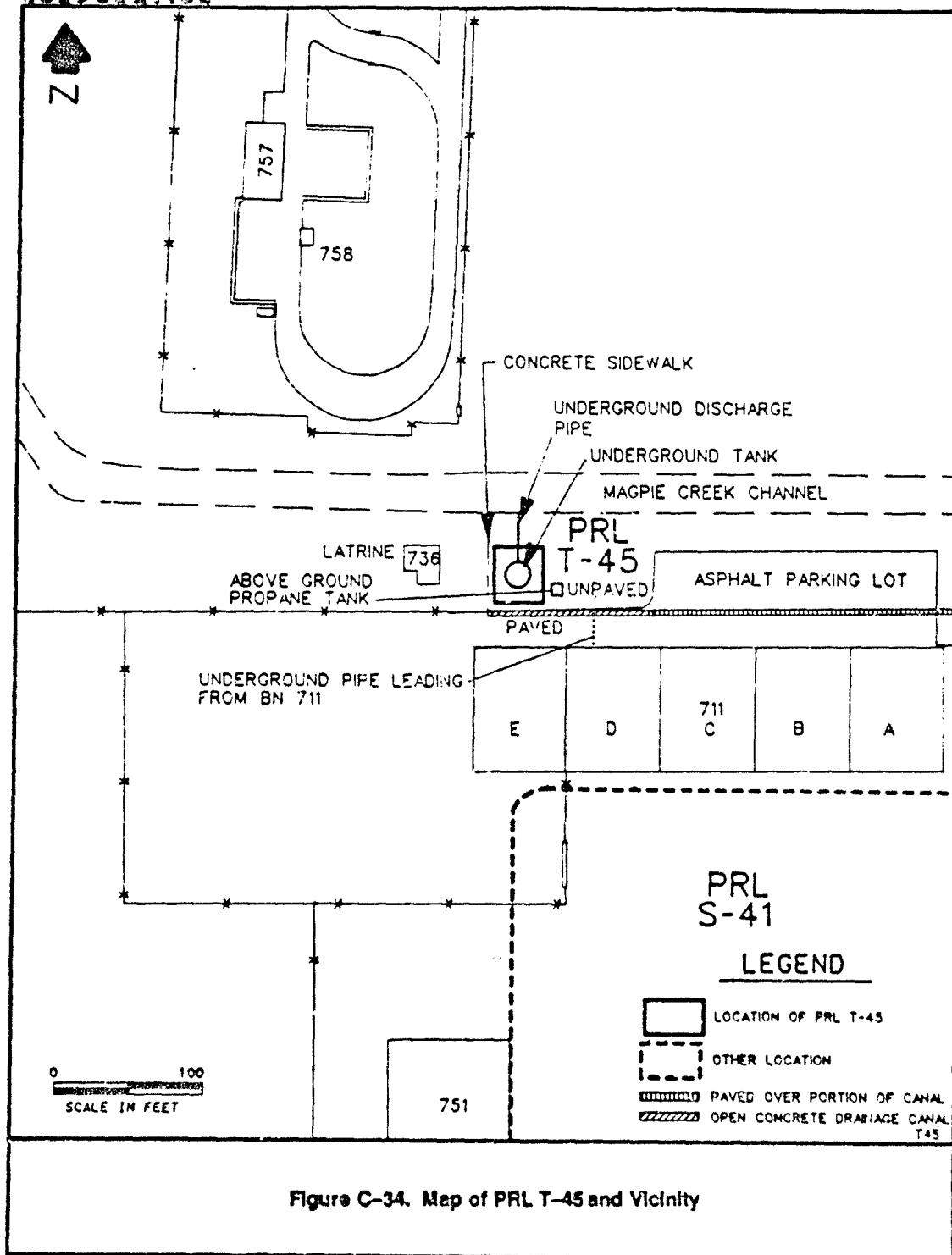
The concrete tank at PRL T-45 discharged to Magpie Creek. The location of the inlet to the tank could not be confirmed with Civil Engineering drawings, but it appears that the tank was connected to Building 711. No personnel familiar with the operation of the tank have been identified.

Period of operation: 1968 to Unknown

Types of materials handled:

Fuels and oils
Semivolatile organic compounds

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Specific chemicals handled:

2-methylnaphthalene
4-chloroaniline
acenaphthylene
anthracene
bis(2-ethylhexyl)phthalate
butylbenzylphthalate
di-n-butylphthalate
dichloromethane
dimethylphthalate
fluoranthene
naphthalene
pyrene

(These chemicals were detected in a sample collected from the tank in 1988.)

Disposal methods:

A discharge pipe leads from the tank to Magpie Creek, located approximately 25 feet to the north.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Remove the abandoned tank and associated piping to eliminate it as a potential source of contamination. Collect and analyze soil samples from the excavation around the tank for volatile and semivolatile organic compounds, fuel hydrocarbons, and metals.

INFORMATION SUMMARY SHEET FOR PRL T-46

DESCRIPTION

Potential Release Location T-46 is the location of a former oil-water separator and current fuel-water separator.

GEOGRAPHIC INFORMATION

Figure C-35 shows the current features at PRL T-46 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,030/2,168,280

Area within boundaries = 752 square feet

Boundaries delineated using information from:

Location visit.

The location boundaries of PRL T-46 include the oil-water separator and the immediate surroundings. The location of the tank was first identified by EG&G Idaho and was confirmed by Radian.

CURRENT ACTIVITIES

PRL T-46 is the location of an abandoned concrete oil-water separator tank south of Mat K. The tank is not in use.

The location is in a topographic depression. Radian's site inspection was conducted on 5 May 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: OIL-WATER SEPARATOR

Description:

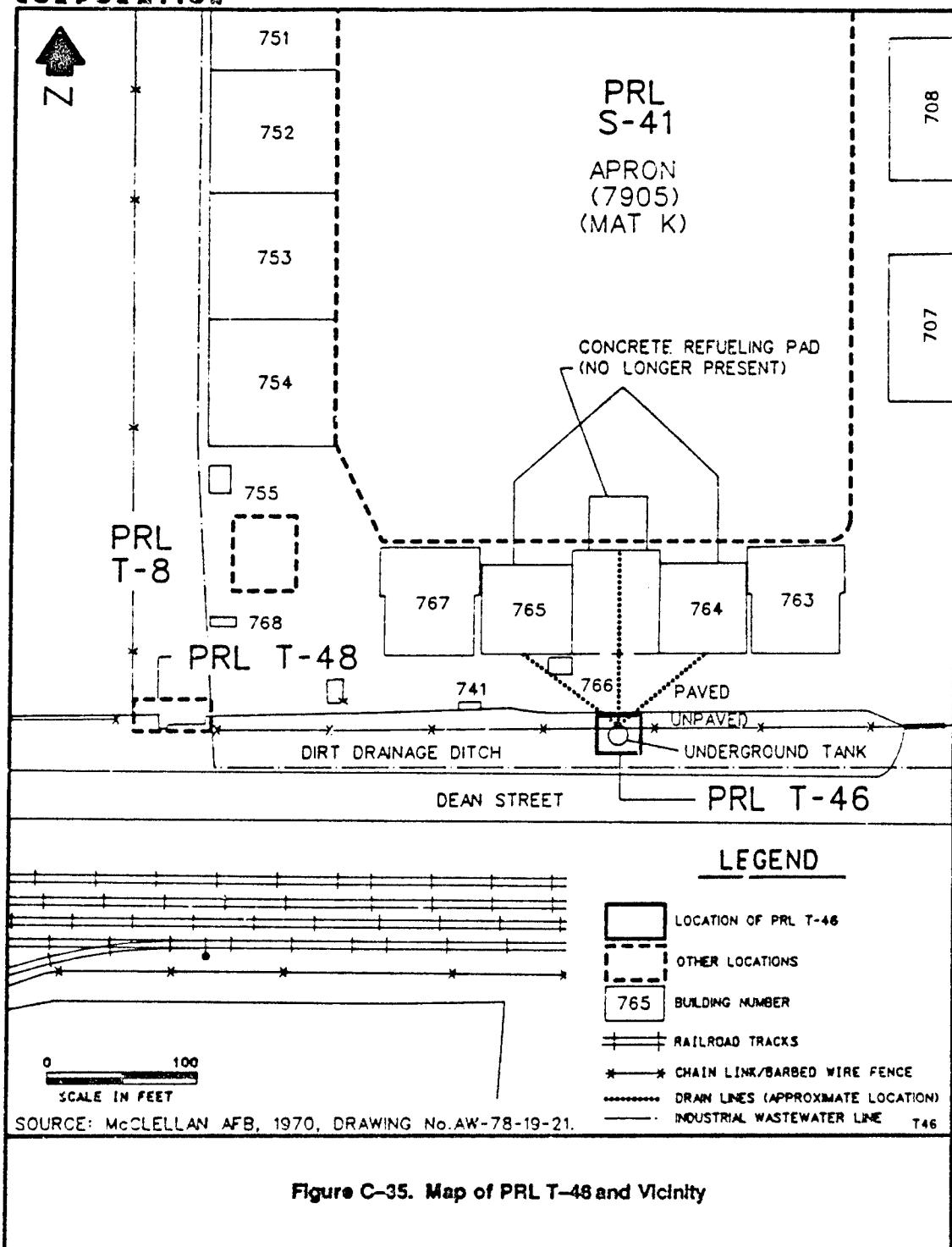
Underground pipes connect the separator to Buildings 764 and 765 and to the refueling area on the south side of Mat K. Jet aircraft fuels and oils were commonly used in these buildings and may have been transported to the tank.

Period of operation: 1968 to Unknown

Types of materials handled:

Fuels and oils

Solvents





Specific chemicals handled:

2,4-dimethylphenol
2-methyl-4,6-dinitrophenol
2-methylnaphthalene
2-nitrophenol
4-chloroaniline
acenaphthene
benzene
bis(2-ethylhexyl)phthalate
dichloromethane
fluorene
heptachlor epoxide
naphthalene
toluene
xylene

(In 1986, EG&G Idaho collected and analyzed samples from the tanks; these chemicals were found in the tank, but are only indicative of what the tanks contained at the time of sampling.)

Disposal methods:

The disposal method for the wastes that collected in the tanks is unknown.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Remove the abandoned tank and associated piping to eliminate it as a potential source of contamination. Collect and analyze soil samples from the excavation around the tank for volatile and semivolatile organic compounds, fuel hydrocarbons, and metals.



INFORMATION SUMMARY SHEET FOR PRL T-48

DESCRIPTION

Potential Release Location T-48 is the location of a former oil-water separator and current fuel-water separator.

GEOGRAPHIC INFORMATION

Figure C-36 shows the current features at PRL T-48 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,050/2,167,980

Area within boundaries = 1,123 square feet

Boundaries delineated using Information from:

Location visit and Civil Engineering drawing.

Based on the location visit and Civil Engineering drawings, Radian delineated the boundaries of PRL T-48 to enclose the fuel-water separator, two underground tanks connected to the separator, and the area surrounding the tanks.

CURRENT ACTIVITIES

An above-ground fuel-water separator and two underground tanks connected to the separator are located at PRL T-48. The fuel-water separator processes wastes produced in the hangars located on the south and west sides of Mat K. Radian's site inspection was conducted on 5 May 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: TWO UNDERGROUND TANKS

Description:

One underground tank was used as an oil-water separator that received wastes from the aircraft hangars at Mat K. Water from the separator flowed into the second tank (i.e., a lift station); the water then was discharged to the storm drain system.

Period of operation: 1968 to 1979

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The water from the oil-water separator was piped to the lift station. The lift station pumped the water to storm drains located west of PRL T-48. The oil and fuel recovered in the separator were collected in a sump.

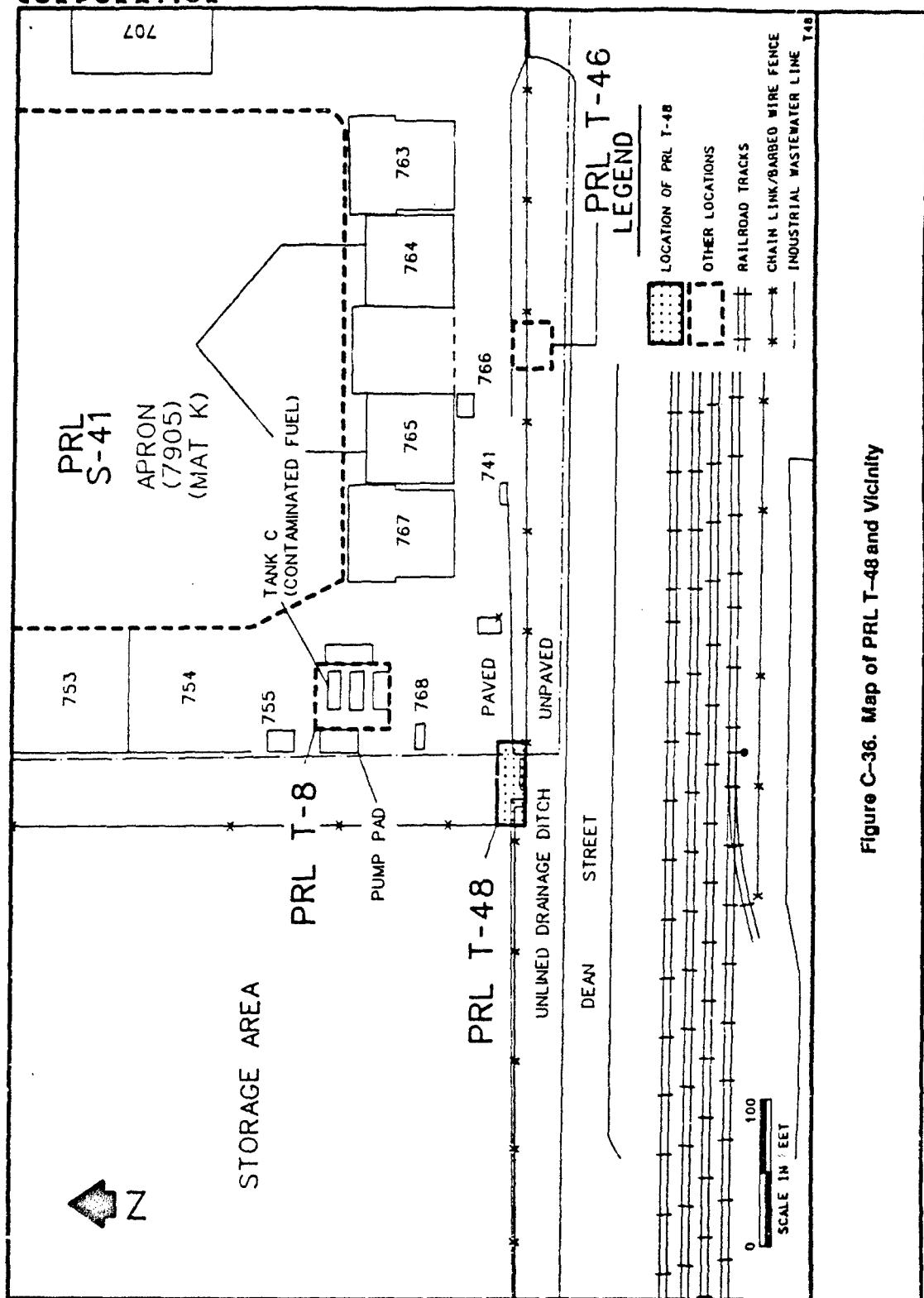


Figure C-36. Map of PRL T-48 and Vicinity

B. Activity/Area: ABOVE-GROUND FUEL-WATER SEPARATOR

Description:

The above-ground fuel-water separator at PRL T-48 processes wastewater produced in the hangars at Mat K. The fuel water separator removes oil and fuel from the wastewater that passes through the separator.

Period of operation: 1979 to Present (1990)

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The oil and fuel recovered in the separator is transported via pipes to an off-site contaminated fuel tank. The water recovered in the separator is sent to the Industrial Wastewater Line.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Remove the two underground tanks and associated piping to eliminate them as a potential sources of contamination. Collect and analyze soil samples from the excavation around the tanks for volatile and semivolatile organic compounds, fuel hydrocarbons, and metals.



INFORMATION SUMMARY SHEET FOR PRL T-60

DESCRIPTION

Potential Release Location T-60 is an underground storage tank.

GEOGRAPHIC INFORMATION

Figure C-37 shows the current features at PRL T-60 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,140/2,169,040

Area within boundaries = 2,446 square feet

Boundaries delineated using information from:
Previous reports and location visit.

CURRENT ACTIVITIES

PRL T-60 is the location of an empty underground fuel storage tank west of Building 656. It is covered by a cement-paved parking lot where a construction trailer associated with activities within Building 656 is located. Radian's site inspection was conducted on 1 June 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: UNDERGROUND FUEL TANKS

Description:

The steel and concrete underground storage tank (UST) stored No. 5 bunker fuel, a viscous oil, for the boilers in Building 656. The tank volume is approximately 30,000 gallons.

Period of operation: 1953 to 1988

Types of materials handled:

Fuels and oils

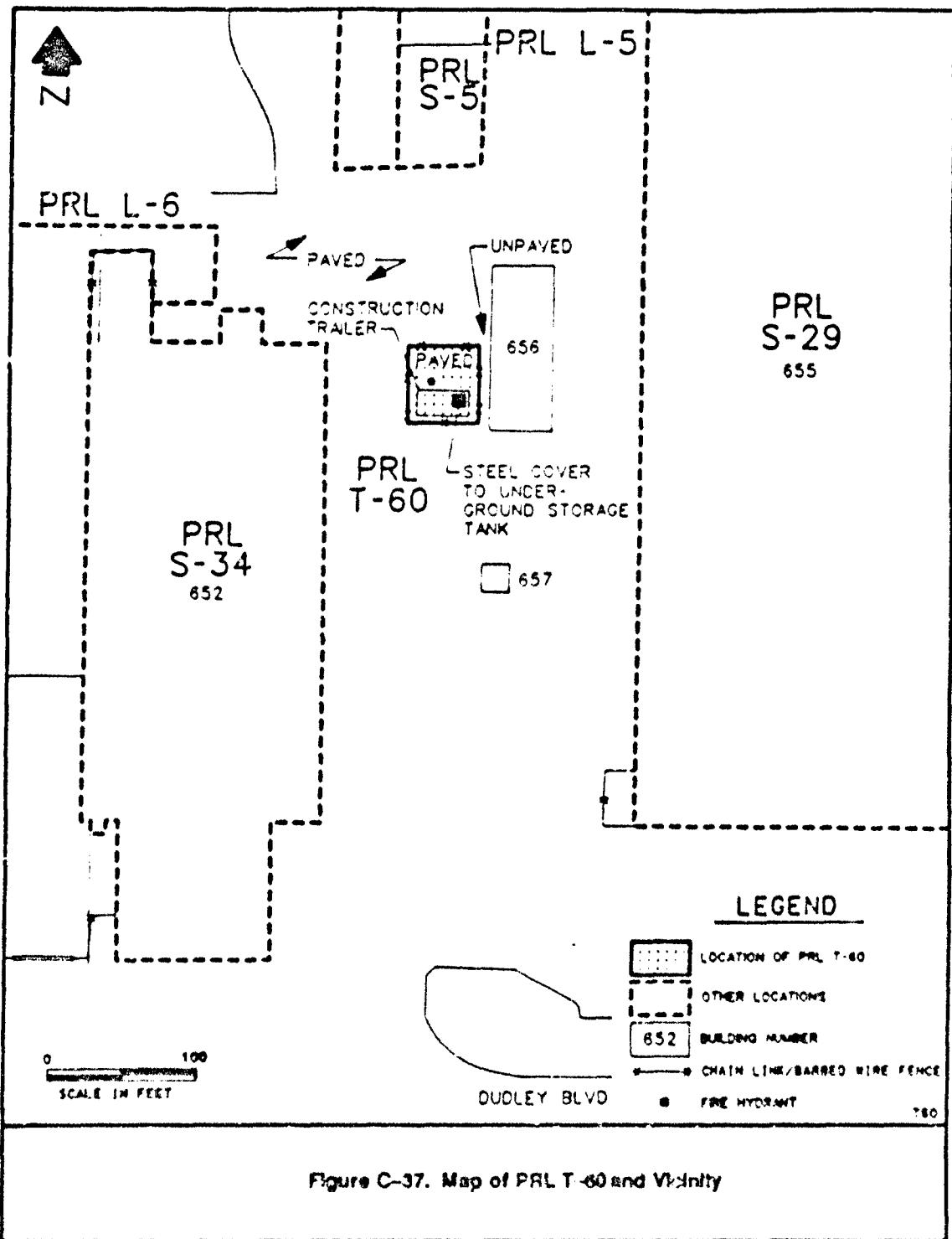
Specific chemicals handled:

dichloromethane
fluoranthene
naphthalene
phenol

Disposal methods:

No wastes were generated in the UST. The fuel was burned in the boilers at Building 656.

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PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 2 (Exact boring locations are not known)

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

Number of soil samples analyzed for:

Volatile organic compounds = 8
Semivolatile organic compounds/pesticides/polychlorinated biphenyls = 0
Metals = 0
Other compounds = 1

No organic compounds were detected in the analyzed soil samples from PRL T-60.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Screen the soil with OVAs. Collect and analyze soil samples from adjacent to and beneath the underground storage tank for aromatic volatile organic compounds, semivolatile organic compounds, and total petroleum hydrocarbons if warranted based on the soils screening.

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INFORMATION SUMMARY SHEET FOR SA 1

DESCRIPTION

Study Area 1 is the location of Building 626 and the staging area, maintenance shop, and washrack that operated within the building.

GEOGRAPHIC INFORMATION

Figure C-38 shows the current features at SA 1 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 356,590/2,168,870

Area within boundaries = 170,318 square feet

Boundaries delineated using information from:
Location visit (13 November 1989).

CURRENT ACTIVITIES

Building 626 is occupied by the Technical Operations Division. It is a warehouse divided into four bays. Bays A, B, and C are used for storage of supplies. Bay D houses the Maintenance Section's shops.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 13 November 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: HAZARDOUS MATERIAL STAGING AREA (BAY A)

Description:

Hazardous materials that have been shipped to Building 626 are stored in this area for a maximum of 48 hours before being moved to Buildings 629, 631, or 1080.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Acids

Bases

Other materials

Paints

Solvents

Specific chemicals handled:

Specific chemicals have not been identified.

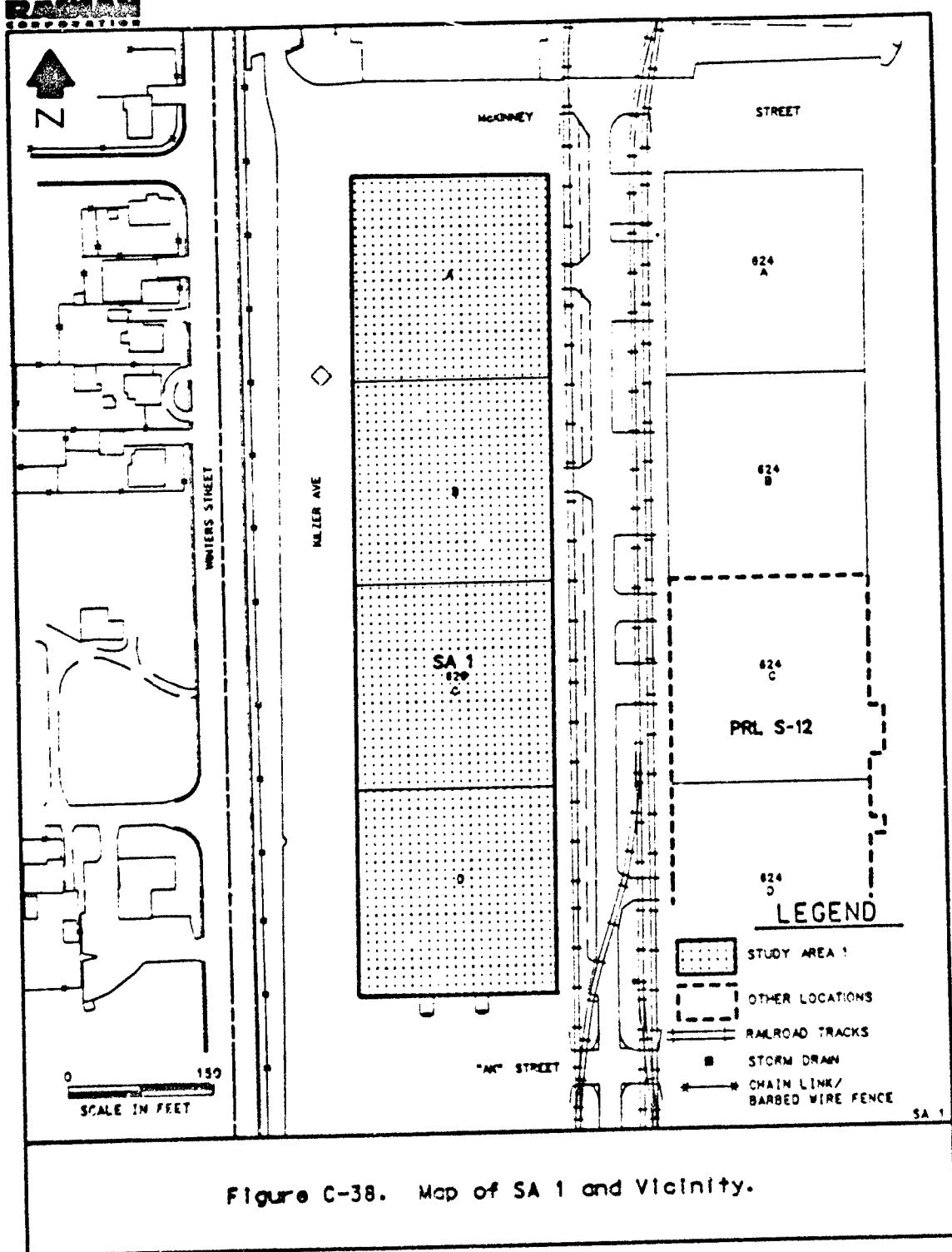


Figure C-38. Map of SA 1 and Vicinity.



B. Activity/Area: DEVELOCORDER

Description:

The devilocorder was a closed, automated system used to develop film. It was removed from Building 626D in 1989.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Photographic developing solutions.

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The photographic chemicals were returned to the base photo laboratory (Building 336; PRL S-20) for disposal.

C. Activity/Area: MAINTENANCE SHOPS

Description:

The Bay D shops repair and maintain equipment used by TOD. Work involves soldering, painting, cleaning and lubricating pieces of equipment.

Period of operation: 1960 to Present (1990)

Types of materials handled:

Fuels and oils

Paints

Solvents

Specific chemicals handled:

1,1,1-trichloroethane

1,1,2-trichloro-1,2,2-trifluoroethane

acetone

cadmium

calcium oxide

capella oil

copper

cyanoacrylate

dichlorodifluoromethane

dichloromethane

ethane

ethyl alcohol

ethylcyanoacrylate ester

ethylene glycol

ethylene glycol monobutyl ether

Freon® 113

Freon® 12

hexane

lead

methylene chloride

polyalkylene glycol

silicon

silicon dioxide

silver

sodium oxide
tetrasodium ethylenediaminetetraacetate
tin
toluene
zinc

Disposal methods:

Most of the solvents are used in very small amounts and evaporate as they are used. Dichloromethane is recycled into its original container. Oily rags are put into a small drum that is taken to the hazardous waste staging area when filled.

D. Activity/Area: PAINT SPRAY BOOTH

Description:

The unit is a small spray booth that is vented through the roof in Building 626D. A maximum of three can of paint a day are used in the booth.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Paints
Solvents

Specific chemicals handled:

acetone
aromatic polyisocyanate
isobutane
methylene chloride
polymethyl methacrylate
toluene
toluene diisocyanate
xylene

Disposal methods:

Vapors are vented through the roof. Excess paint and empty paint cans are stored in a garbage containing vermiculite.

E. Activity/Area: SPHERES WASH RACK

Description:

The wash rack (in Building 626D) is a closed system used for cleaning metal spheres used in air sampling. The solvent is recycled at the end of the process.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Solvents

Specific chemicals handled:

Trichlorotrifluoroethane

Disposal methods:

The trichlorotrifluoroethane is recycled, so no waste is generated. When the wash rack is not in use, the trichlorotrifluoroethane is stored in a drum in the hazardous waste staging area.

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F. Activity/Area: HAZARDOUS WASTE STAGING AREA (BAY D)

Description:

Wastes generated from other activities in the maintenance shops are stored in the Bay D Staging Area before being removed for disposal.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Fuels and oils
Solvents

Specific chemicals handled:

trichlorotrifluoroethane

Disposal methods:

Containerized waste is removed from the building for disposal.

G. Activity/Area: FREON® DISPOSAL AREA

Description:

Freon® waste from the spheres washrack was disposed on the asphalt between the east side of Building 626A and the rail road tracks in 1979.

Period of operation: 1979

Types of materials handled:
Solvents

Specific chemicals handled:
Freon®

Disposal methods:

Freon® disposal was onto the asphalt pavement at least once.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect and analyze soil samples from the area east of Building 626A where Freon® was reportedly dumped.



INFORMATION SUMMARY SHEET FOR SA 2

DESCRIPTION

Study Area 2 is the location of Building 628 and the laboratory that operated within the building.

GEOGRAPHIC INFORMATION

Figure C-39 shows the current features at SA 2 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 357,290/2,168,820

Area within boundaries = 72,143 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

Building 628 is in the process of being decommissioned. Hoods, scrubbers, work benches, cabinets, sinks, and walls are being sampled, removed, and disposed of. A radioactive waste storage area located east of Building 628 is also being decommissioned.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 2 February 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: LABORATORY

Description:

The 1155th Technical Squadron Central Laboratory located in Building 628 performed gas analyses, applied physics-related analyses, and radiation analyses. It was a classified research area. The building contained solvent cleaning rooms.

Period of operation: 1959 to 1988

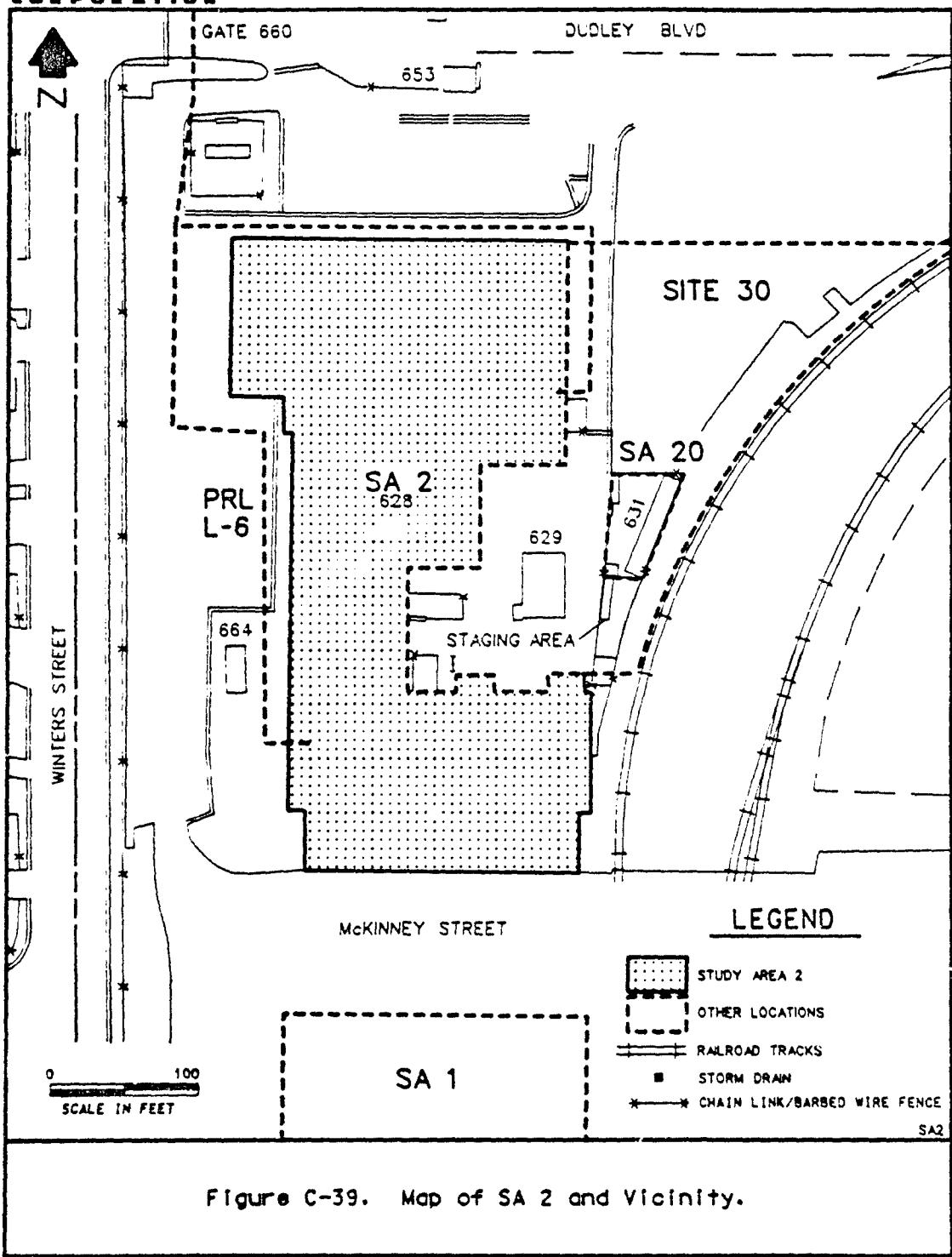
Types of materials handled:

Acids
Bases
Fuels and oils
Heavy metals
Other materials
Paints
Radionuclides
Solvents

Specific chemicals handled:

1,2-dimethoxyethane	1,3-butanedione
1-bromonaphthalene	1-iodonaphthalene
1-nitroso-2-naphthol	2,4,5-T

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2,4-dimethyl-3-pantanone	2,4-pentanedione
2-butanol	2-propanal
3-pantanone	4-hydroxysobutyric acid
8-quinololinol	N,N-dimethylformamide
a-methylbenzyl	alcoholacetic acid
acetone	aluminum
aluminum nitrate	aluminum potassium sulfate
aminobenzoic acid	ammonia
ammonia gas	ammonium acetate
ammonium carbonate	ammonium chloride
ammonium chloridate	ammonium citrate
ammonium dichromate	ammonium disulfate
ammonium hydroxide	ammonium iodide
ammonium molybdate	ammonium nitrate
ammonium oxalate	ammonium persulphate
ammonium phosphate	ammonium sulfate
ammonium sulfide	ammonium sulfite
ammonium tetraurate	ammonium thiocyanate
ammonium-1,2-molybdochosphate	amyl acetate
amyl alcohol	antimony
antimony chloride	antimony pentachloride
antimony trichloride	arsenic
arsenic chlorodene	arsenic trioxide
asbestos	ascorbic acid
barium	barium carbonate
barium chloride	barium hydroxide
barium nitrate	benzaldehyde
benzene	benzene arsonic acid
benzenesulfonic acid	benzoic acid
benzolin	benzolin oxime
benzoyl chloride	beryllium
beryllium acetate	bis(2-ethylhexyl) phosphate
bismuth	bismuth iodide
bismuth nitrate	boric acid
boron	bromine
bromobenzene	butanol
butyl acetate	butyl alcohol, t-
cadmium	cadmium nitrate
calcium	calcium chloride
calcium nitrate	calcium sulfate
camphoric acid	carbon disulfide
carbon tetrachloride	carminic acid
ceric oxide	ceric sulphate
cerium dioxide	cerium nitrate
cerous nitrate	cesium
cesium chloride	cesium nitrate
chloroauric acid	chloroform
chloroplatinic acid	chromium
chromium nitrate	chromium trioxide
chromous chloride	citric acid
cobalt	cobalt nitrate
copper	copper chloride
copper nitrate	copper oxide
cupferron	cyanacrylate
cyclohexane	dibutyl phosphate
dichloroethane	diethanolamine

diethyl ether	diethylamine
dilodomethane	dilisopropyl ether
diisopropyl ketone	dimethyl sulfoxide
dimethylglyoxime	diphenylmethane
dysprosium oxide	erbium oxide
ethyl acetate	ethyl alcohol
ethylene diamine	ethylene glycol
ethylene glycol monoethyl ether	ethylenediaminetetraacetic acid
europlum	europlum nitrate
europlum oxide	ferric chloride
ferric nitrate	ferrous ammonium sulphate
formaldehyde	formic acid
Freon® 113	Freon® 12
gadolinium oxide	gallium
gallium nitrate	gallium oxide
germanium	glucose
glycerol	gold
gold chloride	hafnium
heptane	hexachloroplatinic acid
hexafluoracetone	hexamethylenetetraamine
hexanediamine	holmium
holmium oxide	hydrazine sulfate
hydriodic acid	hydrobromic acid
hydrochloric acid	hydrofluoric acid
hydrogen peroxide	hydrogen sulfide
hydroquinone	hydroxyisobutyric acid
hydroxylamine hydrochloride	indium
iodic acid	iodine
iron	iron chloride
iron nitrate	isobutyl thioglycolate
isooctylthioglycolate	isopropyl alcohol
lactic acid	lanthanum
lanthanum chloride	lanthanum nitrate
lanthanum oxide	lead
lead chloride	lead nitrate
lithium	lithium chloride
lithium fluoride	lithium iodide
lithium nitrate	lutetium oxide
magnesium	magnesium chloride
magnesium nitrate	magnesium oxide
malonic acid	mandelic acid
manganese chloride	manganese oxide
manganese sulfate	manganous chloride
mercuric chloride	mercury
methanol	methoxy phenylacetic acid
methyl ethyl ketone (mek)	methyl isobutyl ketone
molybdenum	molybdenum trioxide
naphthalene	neodymium
neodymium nitrate	neodymium oxide
nickel	nickel nitrate
nicksious nitrate	niobium
niobium oxalate	niobium oxide
nitric acid	nitrobenzene
nitroguanidine	orotic acid
oxalic acid	p-aminobenzoic acid
p-nitrophenol	palladium

palladium chloride	palladium nitrate
pentane	perchloric acid
phenol	phenolphthalein
phosphoric acid	phosphorus
phthalic acid	platinum
plutonium nitrate	potassium
potassium bisulfate	potassium bromate
potassium carbonate	potassium chlorate
potassium chloride	potassium chromate
potassium dichromate	potassium ferricyanide
potassium fluoride	potassium hydroxide
potassium iodate	potassium iodide
potassium niobate	potassium nitrate
potassium nitrite	potassium permanganate
potassium perrhenate	potassium rhenium oxide
potassium thiocyanate	praseodymium
praseodymium chloride	praseodymium nitrate
praseodymium oxide	pyridine
rhenium	rhodium
rhodium nitrate	rubidium nitrate
ruthenium chloride	salicylic acid
samarium	samarium nitrate
samarium oxide	scandium
scandium nitrate	sebacyl chloride
selenium	silicon
silicotungstic acid	silicotungstic acid
silver	silver nitrate
sodium	sodium acetate
sodium azide	sodium bicarbonate
sodium bisulfate	sodium bisulfide
sodium bisulfite	sodium bromate
sodium carbonate	sodium chloride
sodium chlorite	sodium chromate
sodium coba'tinitrite	sodium hydroxide
sodium hypochlorite	sodium hypophosphite
sodium iodide	sodium metabisulfite
sodium nitrate	sodium perchlorate
sodium peroxide	sodium pyrophosphate
sodium pyrosulfite	sodium silicate
sodium sulfate	sodium sulfite
sodium tartrate	sodium thiosulfate
sodium tungstate	stannic chloride
stannous chloride	strontium
strontium carbonate	strontium chloride
strontium nitrate	sucrose
sulfosalicylic acid	sulfur
sulfuric acid	sulfurous acid
tantalum	tantalum oxide
tantalum pentachloride	ta'taric acid
telluric acid	tellurium
tellurium chloride	tellurium oxide
terbium	terbium chloride
terbium nitrate	terbium oxide
tetraethyl ammonium	tetramethyl ammonium iodide
tetraphenolphosphonium	tetraphenyl arsenum
thallium	thallium nitrate

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thenoyl trifluoroacetone	thioacetamide
thorium oxide	thulium
thulium oxide	thymolphalein
tin	titanium
titanium chloride	titanium dioxide
titanium trichloride	toluene
tributyl phosphate	trichloroethene
trichlorotrifluoroethane	triethanolamine
trihydroxytriethylamine	tungsten
tumistic acid	vanadium
xylene	ytterbium nitrate
ytterbium oxide	yttrium
yttrium nitrate	yttrium oxide
zinc	zinc acetate
zinc chloride	zinc nitrate
zinc oxide	zirconium
zirconium chloride	zirconium nitrate
zirconium oxide	zirconium oxychloride

Disposal methods:

Small quantities of non-radioactive spent testing solutions are disposed of down drains which lead to the 1WL. Low-level radioactive wastes (paper, gloves, glassware) are taken to drums in the staging area. Excess chemicals were sent to DPDO for disposal. Some solvents are evaporated in hoods equipped with a water scrubber system. In the past, solvents were also disposed of on the ground west of Building 628 and a darkened area at this location is shown in a 1965 aerial photograph.

B. Activity/Area: STAGING AREA

Description:

A low-level radioactive waste storage or staging area is located east of Building 628 next to the railroad tracks. The solid waste consisted of contaminated paper, glassware, and gloves. It was stored in sealed and properly labeled 55-gallon drums.

Period of operation: 1981 to 1988

(The first inspection of the staging area was in 1986, but other reports indicated that these wastes were stored in 55-gallon drums in 1981. It is unknown where these drums were located prior to 1986.)

Types of materials handled:

Radionuclides

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Low-level radioactive wastes are sent off base in drums to appropriate disposal sites.

C. Activity/Area: UNDERGROUND FUEL TANK

Description:

EG&G identified a tank at Building 628 that was cited for closure. EM subsequently removed the tank from the closure list; the tank is still in place. The 500 gallon tank contained diesel fuel #2. A separator pit is shown in the master drawing near Building 664, a pumphouse, and may have contained diesel fuel.



Period of operation: 1959 to Unknown

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

If the tank was an UST filled with diesel fuel for the pumphouse, there would be no waste generated. If it is an oil/water separator which may have generated wastes, the disposal method is unknown.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

Building 628 is in the process of being decommissioned. This includes removing and disposing of hoods, work benches, scrubbers, cabinets, sinks, and walls. The asphalt beneath the staging area is also being removed. Sanitary and industrial waste drains and lines are being cleaned. The decommissioning is primarily directed towards the removal of radioactive materials and radioactive contamination with the building.

RECOMMENDATIONS

Evaluate results of soil sampling performed during decommissioning. Conduct the RI for Building 628 and PRL 30 collectively.

INFORMATION SUMMARY SHEET FOR SA 3

DESCRIPTION

Study Area 3 is a washrack north of Building 685.

GEOGRAPHIC INFORMATION

Figure C-40 shows the current features at SA 3 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,840/2,169,150

Area within boundaries = 29,088 square feet

Boundaries delineated using information from:

Aerial photographs, historical files and reports, and interviews.

CURRENT ACTIVITIES

The area is a washrack north of Building 685. Both base and subcontractors used the washrack to dispose of wastewater and sediment generated in the washing of vehicles. The fenced area, located immediately north of the washrack, is also included in the location boundaries.

The location is in a topographic depression. Radian's site inspection was conducted on 18 December 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: FENCED AREA NORTH OF WASHRACK

Description:

A fenced area containing 55-gallon drums is located immediately north of the washrack and south of Building 692 and Magpie Creek. This fenced area contains a material storage yard with drums of potentially contaminated soil on an asphalt paved surface.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

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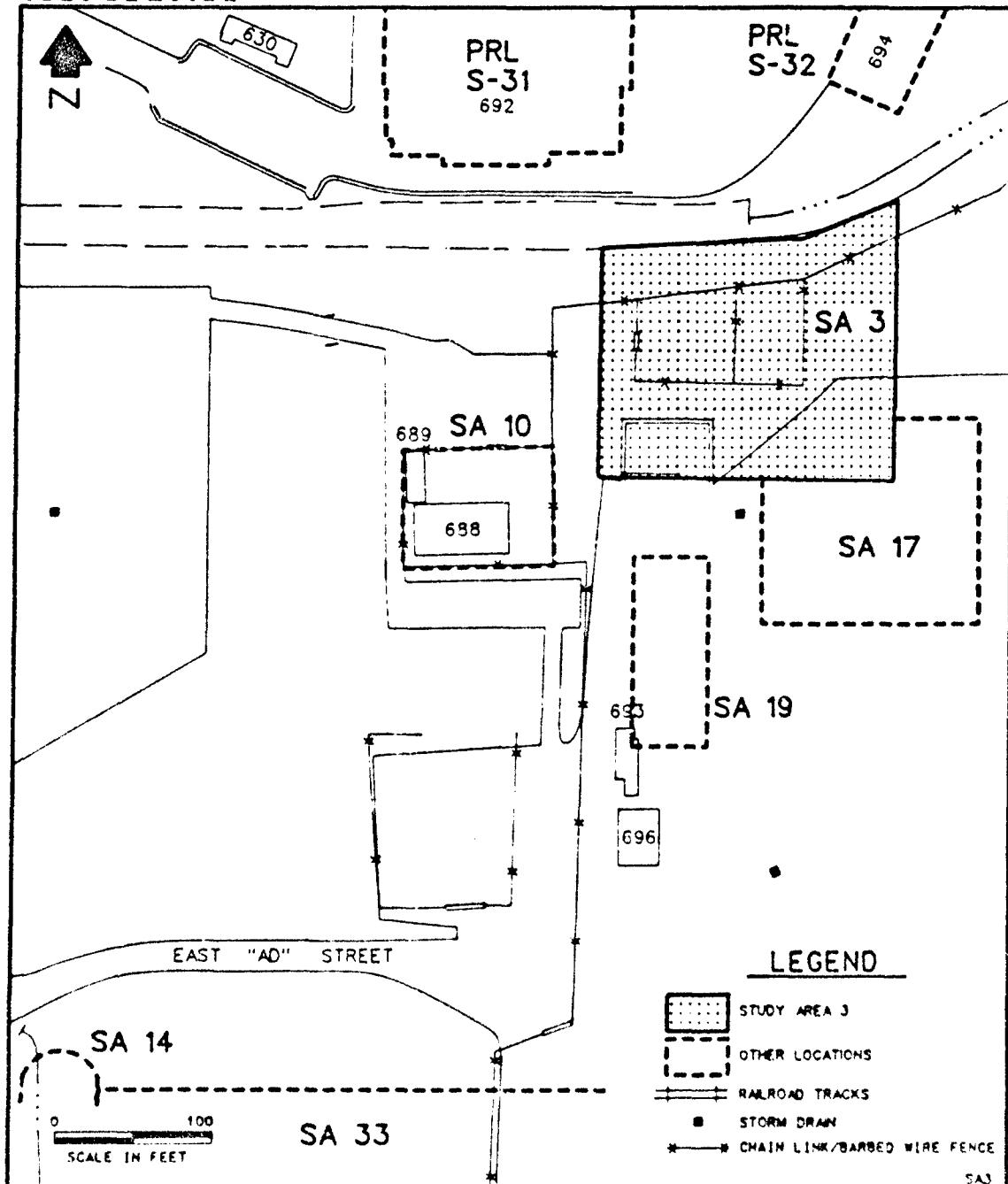


Figure C-40. Map of SA 3 and Vicinity.



B. Activity/Area: WASHRACK NORTH OF BUILDING 685

Description:

The washrack located north of Building 685, and south of Magpie Creek, is used by base personnel and subcontractors to dispose of wastewater, sediment, and cleaning of vehicles (i.e., dump trucks, etc.).

Period of operation: 1966 to Present (1990)

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The washrack is connected to the IWL.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 8 (exact boring locations are not known)

Odors or visual evidence of contamination noted:

Aerial photographs indicate that the soil north of the washrack historically has been discolored, but it has not been determined if the discoloration was caused by contamination.

No soil gas readings were taken.

Number of soil samples analyzed for:

Volatile organic compounds = 8

Semivolatile organic compounds/pesticides/polychlorinated biphenyls = 8

Metals = 8

Other compounds =

Table C-8 lists the organic compounds detected in soil samples collected from SA 3.

REMEDIAL ACTIONS

Other than sludge samples taken while drain at washrack was clogged, no remedial actions has occurred.

RECOMMENDATIONS

Collect and analyze soil, sediment, and water samples to determine if contamination is present.



TABLE C-7. ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES FROM SA 3

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration ug/kg (ppb)
2	5	trichlorofluoromethane	3
2	10	trichlorofluoromethane	2
3	9	trichlorofluoromethane	1
5	4	trichlorofluoromethane	2
5	9	trichlorofluoromethane	3
6	4	benzo[a]anthracene	41
6	4	di-n-octyl phthalate	24
6	9	trichlorofluoromethane	15
7	4	trichlorofluoromethane	2
7	8	trichlorofluoromethane	4
7	4	xylenes (dimethyl benzenes)	10
8	4	trichlorofluoromethane	7
8	9	trichlorofluoromethane	5
9	4	benzo[a]anthracene	41
9	4	benzo[k]fluoranthene	57
9	4	trichlorofluoromethane	2

BGS = Below ground surface.



INFORMATION SUMMARY SHEET FOR SA 4

DESCRIPTION

Study Area 4 is the location of a paint shop in Building 650.

GEOGRAPHIC INFORMATION

Figure C-41 shows the current features at SA 4 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,780/2,170,510

Area within boundaries = 168,775 square feet

Boundaries delineated using information from:
Location visit and base maps.

CURRENT ACTIVITIES

Building 650 is split into four bays. Bay A is a lumber warehouse and packaging & crate reclamation area. Bay B is a paint and carpenter shop. A staging area associated with paint shop wastes is located west of Bay B. Bay C is a steel warehouse, and Bay D is a tooling warehouse for aircraft. Radian's site inspection was conducted on 14 November 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: BUILDING 650B PAINT SHOP

Description:

Building 650B, paint shop, contains a spray booth with water fall for collection of vapors from paints, lacquers, and thinners. This unit also includes the staging area for all hazardous waste produced from this operation.

Period of operation: 1970 to Present (1990)

Types of materials handled:

Paints
Solvents

Specific chemicals handled:

acetic acid	acetone
acetophenylmercury	butyl cellosolve
butyraldehyde oxime	cobalt carboxylate
cobalt naphthenate	di-n-butylphthalate
ethanol	ethyl acetate
ethyl alcohol	ethyl benzene
ethylene glycol	ethylene glycol monobutyl ether
ethylene glycol monobutyl ether acetate	ethylene glycol monoethyl ether acetate
ethylene glycol monopropyl ether	heptane
iron oxides	isobutane
isobutyl acetate	isobutyl alcohol

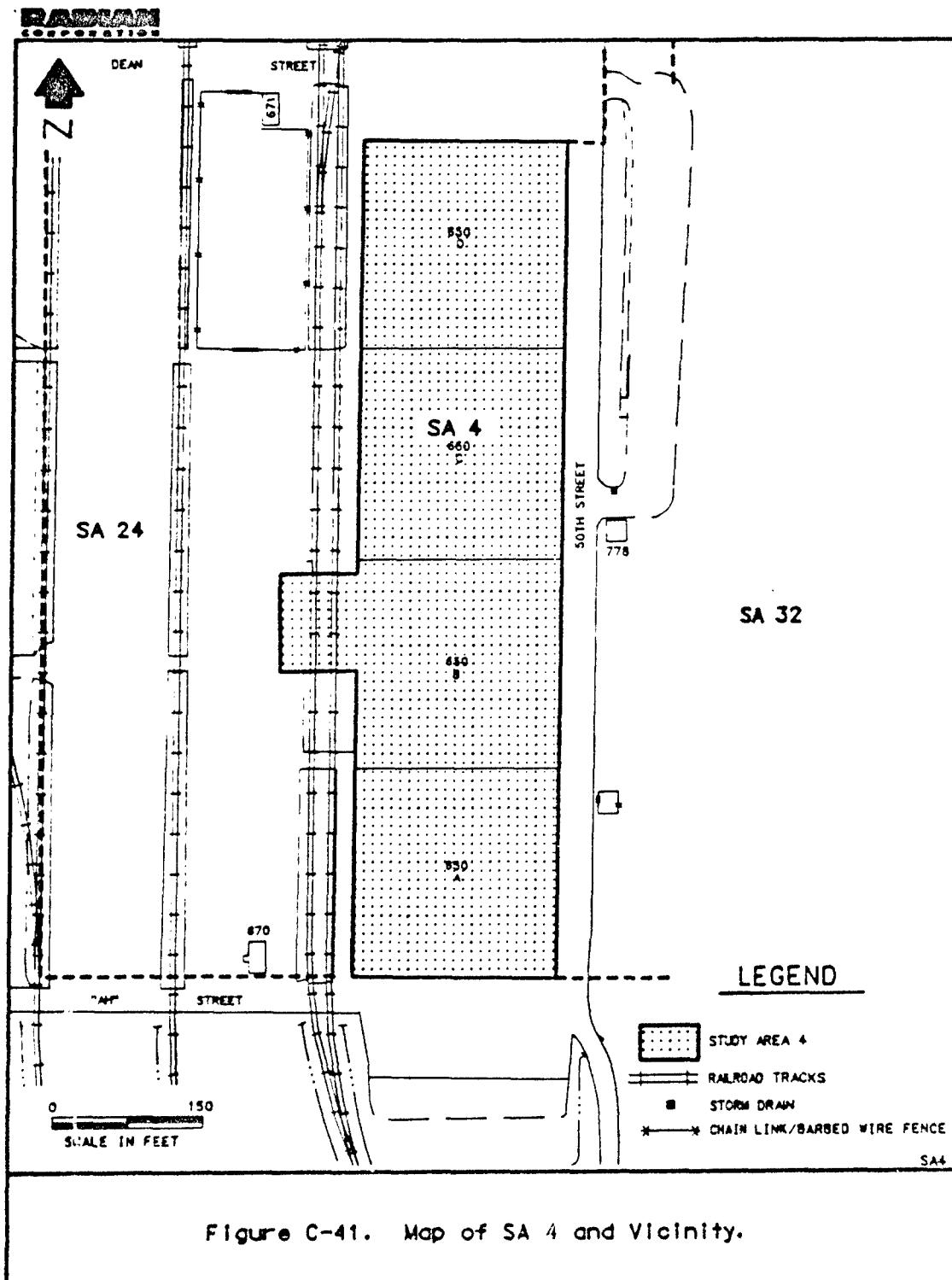


Figure C-41. Map of SA 4 and Vicinity.



isopropyl alcohol	lead
lead chromate	magnesium silicate
methanol	methyl ethyl ketone (mek)
methyl isobutyl carbinol	methyl isobutyl ketone
methylene chloride	n-butyl acetate
n-butyl alcohol	nitrocellulose
phenol	titanium dioxide
toluene	triethylamine
vinyl acetate	xylene
zinc	zinc chromate
zinc stearate	

Disposal methods:

Spent solvents or thinners are taken to a hazardous waste 55-gallon drum at the staging area. Wash water from waterfall booth is pumped to another drum at the staging area. The drums are taken to DRMO when full.

B. Activity/Area: BUILDING 650A PAINTING

Description:

Building 650A is a lumber, packaging warehouse, and crate reclamation area. Markings on crates are painted over and aerosol paint is used for stenciling crates. These operations take place inside or outside the building.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Other materials
Paints

Specific chemicals handled:

1,1,1-trichloroethane
1,1,2-trichloro-1,2,2-trifluoroethane
2-methyl-2-pentanol-4-one
acetone
acrylonitrile
butadiene
butyl acetate
butylated hydroxytoluene
diethylene glycol
dioctyl diphenylamine
ethyl alcohol
ethylene glycol
isobutane
lead chromate
lithium hydroxy stearate
magnesium silicate
methyl ethyl ketone (mek)
methylene chloride
nitropropane
phenol terpolymer
propylene glycol monomethyl ether
titanium dioxide
toluene
xylene

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Disposal methods:

All are reportedly used in the process.

C. Activity/Area: BUILDING 650D

Description:

During the 1970s, Building 650D was used for installation of radio and radar equipment.

Period of operation: 1970 to Unknown

Types of materials handled:

- Fuels and oils
- Other materials
- Paints
- Pesticides
- Solvents

Specific chemicals handled:

- 1,1,1-trichloroethane
- acetone
- butane
- butyl acetate
- butyl cellosolve
- cellosolve acetate
- dichlorodifluoromethane
- ethane
- ethylene glycol monobutyl ether
- ethylene glycol monobutyl ether acetate
- isobutane
- isobutyl acetate
- isopropyl alcohol
- methyl ethyl ketone (MEK)
- methylene chloride
- resmethrin
- tetrachloroethene
- toluene
- trichlorofluoromethane
- trichlorotrifluoroethane
- xylene

Disposal methods:

Unknown.



PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Soil gas sampling and analysis should be performed around Building 650 to determine if contaminants have been released to the soil through cracks in the building's foundation. If soil gas results indicate that volatile organic compounds may be present in the soil, soil samples will be collected and analyzed for volatile and semivolatile organic compounds.

INFORMATION SUMMARY SHEET FOR SA 5

DESCRIPTION

Study Area 5 is the location of steam boilers and a paint storage warehouse in Building 656.

GEOGRAPHIC INFORMATION

Figure C-42 shows the current features at SA 5 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,160/2,169,090

Area within boundaries = 4,222 square feet

Boundaries delineated using information from:
Previous reports and Civil Engineering drawings.

CURRENT ACTIVITIES

Three quarters of Building 656 is a steam boiler plant; the remainder of the building is used to store paint.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 12 December 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: BOILER PLANT

Description:

The three boilers located inside Building 656 has historically produced steam. The steam produced in Building 656 supported (among other operations) the operations in Building 692, an aircraft hangar. Fuel for the boilers was transported via fuel lines from the tank west of the building.

Period of operation: 1953 to Present (1990)

Types of materials handled:

Fuels and oils

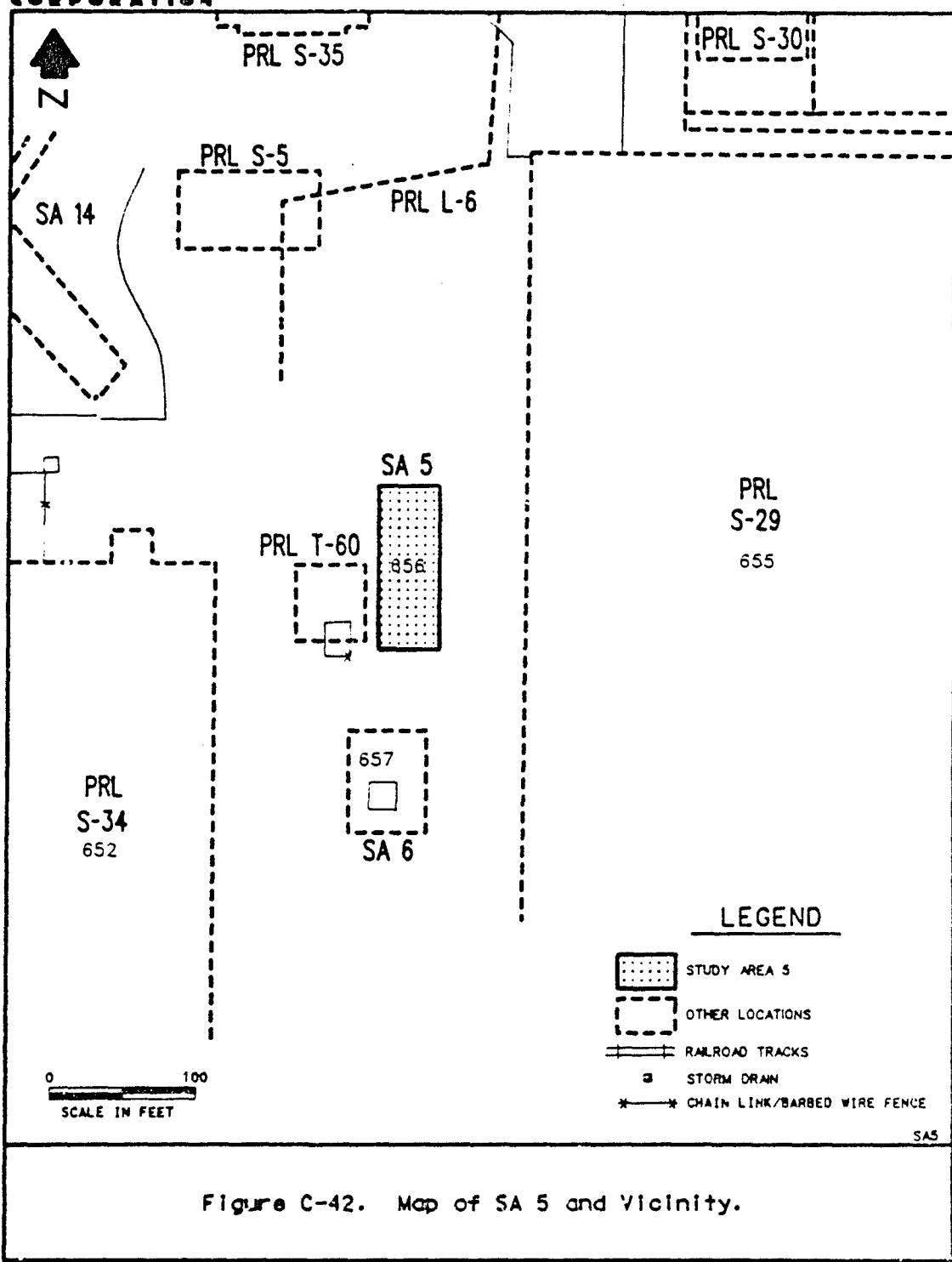
Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

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B. Activity/Area: PAINT STORAGE

Description:

The northern quarter of Building 656 is used as a paint storage warehouse. The paints and lacquers are stored in sealed containers on metal shelves. At the time of the location visit, the warehouse smelled strongly of paint and spilled paint was visible on the concrete floor.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Paints

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are generated.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Inspect historical sump locations within the building to determine if they have leaked. Also, inspect the fuel lines that lead from the fuel tank west of Building 656 (PRL T-60) to the boiler plant.



INFORMATION SUMMARY SHEET FOR SA 6

DESCRIPTION

Study Area 6 is the location of a gas station at Building 657.

GEOGRAPHIC INFORMATION

Figure C-43 shows the current features at SA 6 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,010/2,169,080

Area within boundaries = 3,000 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

Building 657 is a service station. Unleaded gasoline is stored in an underground fuel tank. There is also an above-ground propane tank within Study Area 6. Radian's site inspection was conducted on 5 January 1990.

HISTORICAL ACTIVITIES

A. Activity/Area: UNDERGROUND FUEL TANK

Description:

A 10,000 gallon underground fuel tank was constructed in the mid-1950s.

Period of operation: 1955 to Present (1990)

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

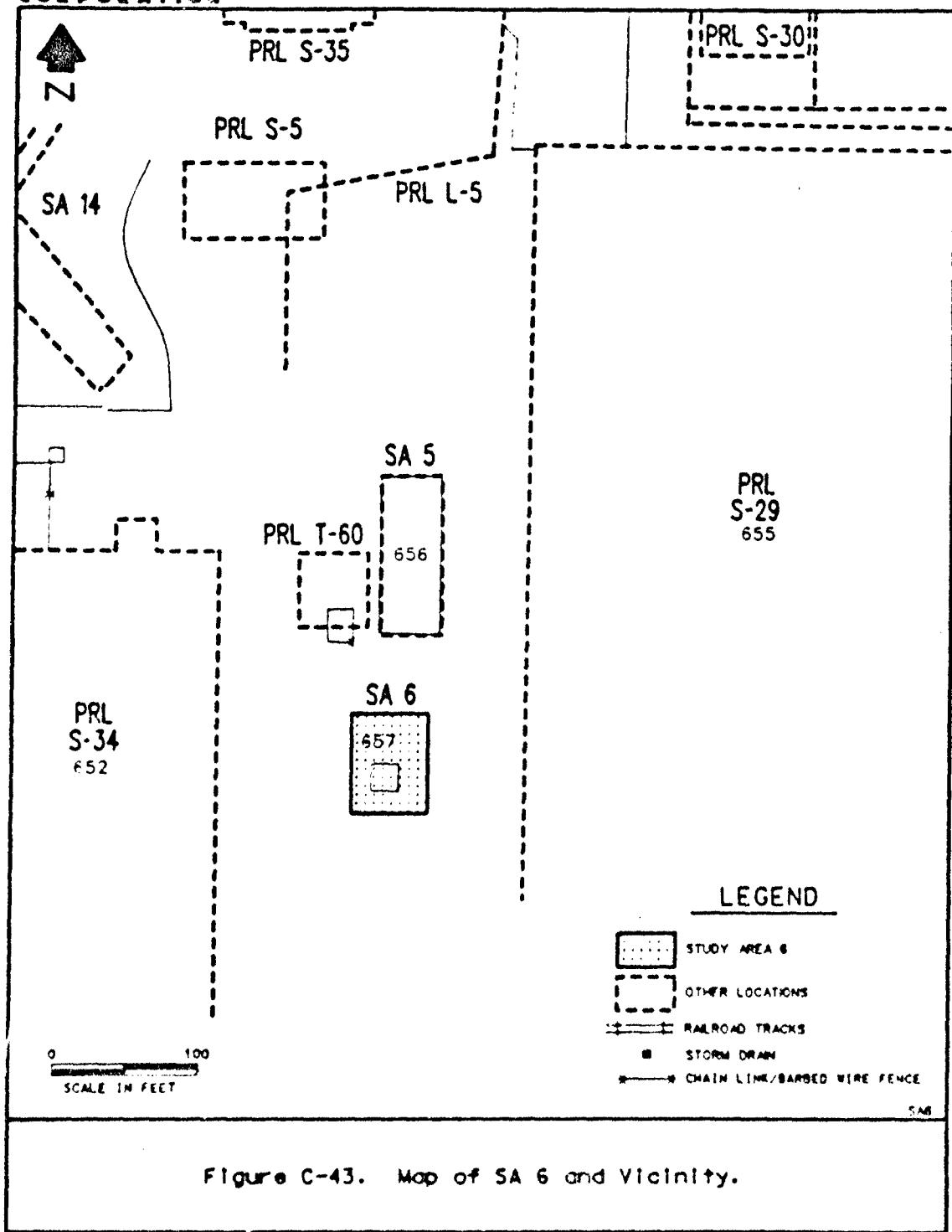
No wastes are generated.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Cores or visual evidence of contamination noted:
None.

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No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect soil samples to determine if contamination is present.



INFORMATION SUMMARY SHEET FOR SA 7

DESCRIPTION

Study Area 7 is the location of a former washrack and fueling area at Building 659.

GEOGRAPHIC INFORMATION

Figure C-44 shows the current features at SA 7 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,730/2,169,210

Area within boundaries = 10,609 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

Building 659 is an abandoned washrack/fueling area that is now being used as a hazardous materials staging area. An outdoor staging area, located approximately 50 feet east of Building 659, is also included in the location boundaries. Radian's site inspection was conducted on 12 December 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: WASHRACK/FUELING AREA

Description:

Building 659 was used as a washrack and fueling/defueling area for fuel tanker trucks.

Period of operation: 1951 to 1981

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

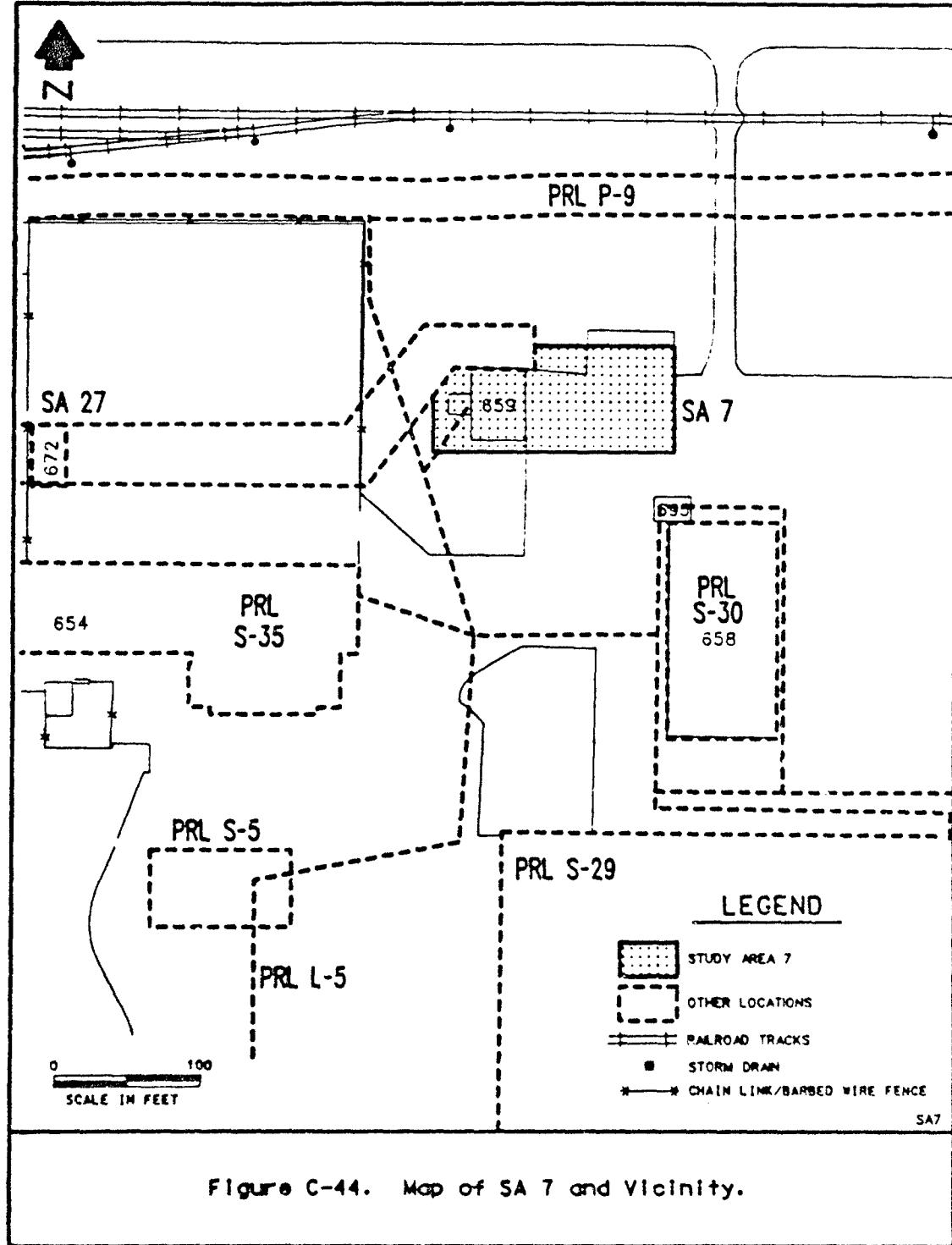
Disposal methods:

There were four drains which collected waste water and spilled fuel. The original construction drawings show the drains discharging to an open ditch. However, the drains were later connected to the IWL.

B. Activity/Area: UNDERGROUND FUEL TANKS

Description:

Three 2,000-gallon steel underground storage tanks containing fuel were located immediately west of Building 659. The tanks may have been removed, but this information has not been confirmed.





Period of operation: 1951 to 1981

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Fuel from the tanks were pumped into tanker trucks through hoses located at the Building 659 washrack/fueling.

C. Activity/Area: STAGING AREA - BUILDING 659

Description:

The abandoned washrack/fueling area is currently being used for temporary storage of hazardous materials. The materials are stored in drums or pallets in bays of the washrack.

Period of operation: 1987 to Present (1990)

Types of materials handled:

Other materials
Solvents

Specific chemicals handled:

alcohol

Disposal methods:

Hazardous materials are only stored in Building 659. Disposal takes place off-site. The drains in the washrack have been sealed.

D. Activity/Area: OUTDOOR STAGING AREA

Description:

The bermed asphalt staging area located approximately 50 feet east of Building 659 is used to store the hazardous materials used in Building 658.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Paints
Solvents

Specific chemicals handled:

urethane

Disposal methods:

Hazardous materials are only stored in the staging area. Disposal takes place off-site.



PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

Soil samples were collected as part of the UST investigation, however, analytical data could not be located.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Investigate the USTs. Collect and analyze soil and soil gas samples to determine if contamination is present. Drainage from the washrack/fueling station into an open ditch is a potential source of contamination, but the ditch being investigated as a separate location.

INFORMATION SUMMARY SHEET FOR SA 8**DESCRIPTION**

Study Area 8 is the location of an underground gasoline storage tank at Building 663.

GEOGRAPHIC INFORMATION

Figure C-45 shows the current features at SA 8 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 357,840/2,168,590

Area within boundaries = 3,816 square feet

Boundaries delineated using information from:
Previous reports.

CURRENT ACTIVITIES

Building 663 is a pump house associated with the large above-ground water storage tank located just west of the building. The area surrounding Building 663 is primarily unpaved soil. Radian's site inspection was conducted on 5 January 1990.

HISTORICAL ACTIVITIES**A. Activity/Area: UNDERGROUND STORAGE TANK****Description:**

A 550-gallon steel underground tank was constructed in the 1950s. The tank has been used to store gasoline for the pump in Building 663.

Period of operation: 1955 to Present (1990)

Types of materials handled:

Fuels and oils

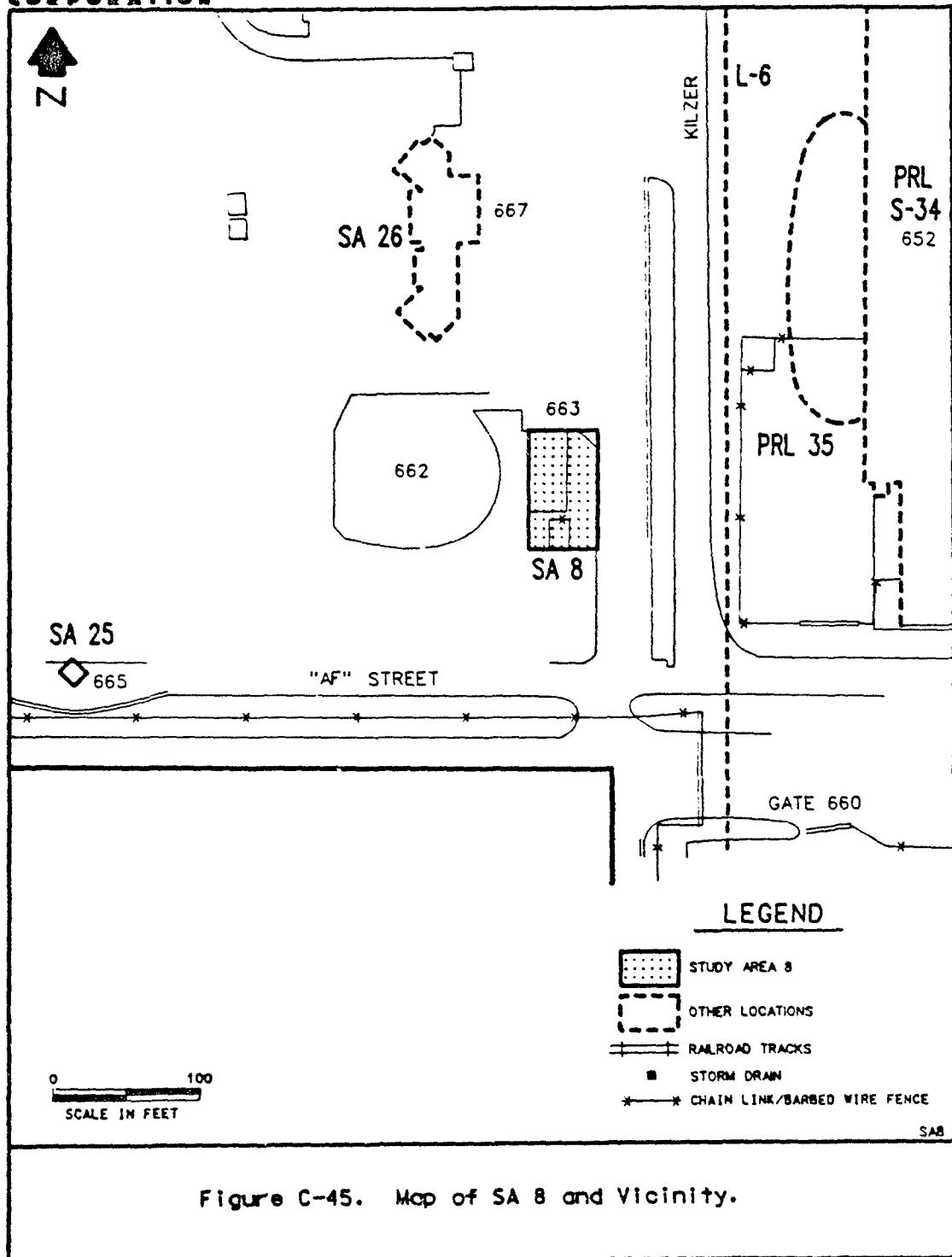
Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are generated.

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PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect soil samples to determine if contamination is present.

INFORMATION SUMMARY SHEET FOR SA 9

DESCRIPTION

Study Area 9 is the location of the hazardous materials storage warehouse at Building 684.

GEOGRAPHIC INFORMATION

Figure C-46 shows the current features at SA 9 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,640/2,169,870

Area within boundaries = 173,751 square feet

Boundaries delineated using information from:

Interviews and analytical data.

Building 684 was identified as a handler of hazardous materials based on Bioenvironmental Engineering files. The area east of Building 684 was included based on analytical data and interviews. The explosive material storage area was also included in the study area boundaries.

CURRENT ACTIVITIES

Building 684 is used as an air freight terminal. A hazardous material's temporary storage area and a classified materials storage area are located within Building 684. An explosive materials storage area is located northeast of the building.

A portion of the location is in a topographic depression. A continuous and effective barrier to entry exists at the site. Radian's site inspection was conducted on 2 November 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: CLASSIFIED STORAGE AREA

Description:

Small amounts of classified materials (i.e., low-level explosives) are stored inside locked cages within Building 684. These materials are stored in these cages temporarily until they are shipped out via truck or airplane.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Other materials

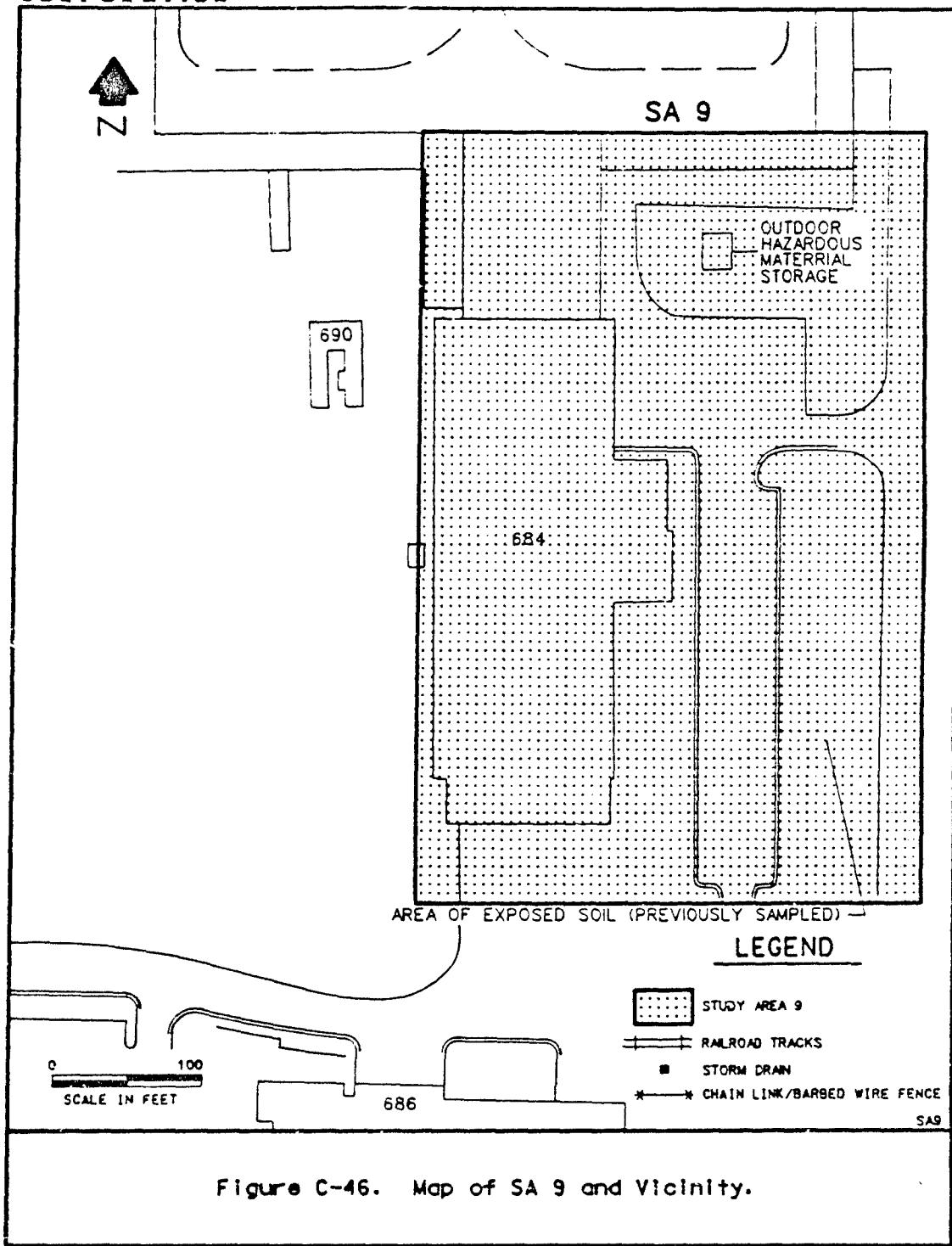
Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No waste is produced.

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B. Activity/Area: CONTAMINATED SOIL AREA

Description:

Aerial photos reveal that the site has been used intermittently for storage. Cars and airplanes were periodically parked across the site. In 1968, the unit was almost completely covered by crates, barrels, and other unidentifiable objects.

Period of operation: 1946 to 1968

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

C. Activity/Area: HAZARDOUS MATERIALS STORAGE (OUTSIDE)

Description:

Class B (i.e., slight explosive) materials are temporarily stored on a concrete pad northeast of Building 684. These materials are stored in the same packages that they arrived in at Building 684.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Other materials

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are produced.

D. Activity/Area: HAZARDOUS MATERIALS TEMPORARY STORAGE

Description:

Hazardous materials are temporarily stored (usually <24 hours) in this area inside Building 684. Each type of hazardous material is stored in a separate portion of the hazardous storage area. The materials are stored in the sealed packages that they are transported in.

Period of operation: Unknown to Present (1990)



Types of materials handled:

Acids
Bases
Fuels and oils
Paints
Solvents

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are produced.

E. Activity/Area: HYDRAULIC LIFT SUMPS

Description:

The sumps enclose the motors for the hydraulic lifts used to lift pallets in Building 684.

Period of operation: 1976 to Present (1990)

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are removed from the sump.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 2 (exact boring locations are not known)

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

Number of soil samples analyzed for:

Volatile organic compounds = 2
Semivolatile organic compounds/pesticides/polychlorinated biphenyls = 2
Metals = 2
Other compounds = 0

Table C-9 lists the organic compounds detected in soil samples collected from SA 9.



TABLE C-8. ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES FROM SA 9

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration ug/kg (ppb)
EM3507	Unknown	trichlorofluoromethane	11
EM3508	Unknown	toluene	10
EM3508	Unknown	trichlorofluoromethane	97
EM3508	Unknown	xylenes	1

BGS = Below ground surface.



REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect and analyze additional soil samples to characterize the extent of contamination. An integrity test should be performed on the hydraulic lift sumps.



INFORMATION SUMMARY SHEET FOR SA 10

DESCRIPTION

Study Area 10 is the location of a herbicide/pesticide storage area, washrack, and wastewater storage tank and sump at Building 688.

GEOGRAPHIC INFORMATION

Figure C-47 shows the current features at SA 10 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,740/2,168,970

Area within boundaries = 7,341 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

Building 688 is used by the entomology group as a storage and staging area for pest control activities at McClellan AFB. Herbicides and pesticides are stored in the building.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 31 October 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: HERBICIDE/PESTICIDE SINK

Description:

Insecticides and herbicides are poured into spray equipment within the sink in Building 688.

Period of operation: 1980 to Present (1990)

Types of materials handled:

Other materials

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The sink is equipped with a drain that discharges to the wastewater sump located outside of Building 688.

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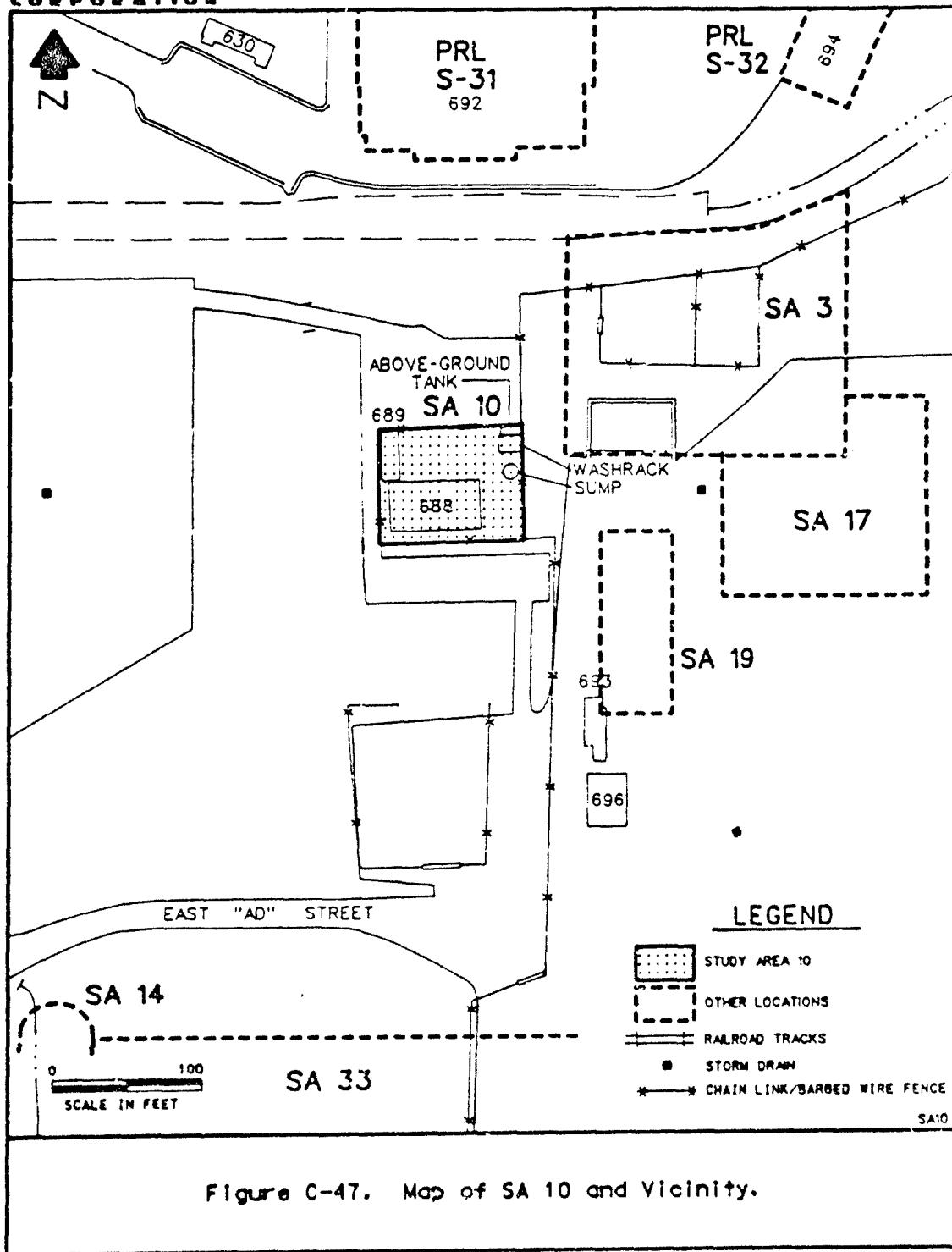


Figure C-47. Map of SA 10 and Vicinity.

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B. Activity/Area: PESTICIDE/HERBICIDE ROOMS

Description:

Hazardous herbicides and pesticides are stored in various containers on metal shelves in Building 683. The pesticides are stored in one locked room and the herbicides are stored in another.

Period of operation: 1980 to Present (1990)

Types of materials handled:

Other materials

Semivolatile organic compounds (unspecified)

Specific chemicals handled:

2,4-D	2,4-bis(ethylamino)-6-chloro-s-triazine
2-(2-ethoxyethoxy)ethyl-benzimidazole	carbamate
2-ethylsulfonyl	4 chloro-2-methylphenoxy-a-propionic acid
acid blue	acid yellow
aliphatic amine	aminopyridine
atrazine	avitrol
bayleton	bensulide
benzene sulfonate	bidrin
bordoil	boric acid
bromadiolone	bromadiolone
carbaryl	chlordane
chlorophenoxy-dimethyl butanone	chloropyrifos
copper sulfate	d-phenathrin
diazide	dlazinon
dicamba	dichlorobenzene, p-
dichlorodifluoromethane	dichlorvos
diethyltoluamide	dimethyl phthalate
dipacinone	diphenadione
diquat	diuron
dryzalin	ethoxyimino-butyl-ethylthiopropyl
ferris sulfate	fungisol
garbaryl	glyphosate
hydrazone	hydroxycyclohexadiene-1-one
isobutane	isopropylamine
methoprene	methaldehyde
methyl-2-benzimidazolecarbamate	methoxypropazine
monosodium methyl arsonate	methylene chloride
n-octyl bicycloheptene	n-octyl bicycloheptane
phenol methyl carbamate	o-dimethyl phosphorthate
precor	piperonyl butoxide
ramik green	pyrethrin
sodium chlorate	safrotin
sodium nitrate	sodium metaborate
surflan	strychnine
trichlorofluoromethane	tetrachloroethylene
	trimek

Disposal methods:

The empty herbicide/pesticide containers are collected in a drum and disposed off-base. Wastewater contaminated with herbicides or pesticides is collected in an underground tank northeast of Building 688. The wastewater is eventually discharged into the IWTP.



C. Activity/Area: WASHRACK

Description:

Concentrated insecticides and herbicides are diluted with water in the washrack.

Period of operation: 1980 to Present (1990)

Types of materials handled:

Other materials

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Wastewater generated within the washrack is collected in a drain located in the center of the washrack. This drain discharges to the wastewater sump/tank located adjacent to the washrack. Pesticides and herbicides are handled in the washrack. Two barrels of the pesticide Malathion are stored in the corner of the washrack.

D. Activity/Area: WASTEWATER BOWSER

Description:

The wastewater bowser is an above-ground portable steel tank that is used to collect herbicide/pesticide contaminated wastewater. Wastewater is pumped from the underground tank northeast of Building 688 to the wastewater bowser.

Period of operation: 1985 to Present (1990)

Types of materials handled:

Other materials

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The wastewater in the bowser is transported to the IWTP.

E. Activity/Area: WASTEWATER STORAGE SUMP

Description:

Wastewater (containing insecticides and herbicides) from the sink, clothes washer, and floor drain inside Building 688 and from the washrack outside of Building 688 are collected in the underground concrete storage sump/tank.

Period of operation: 1980 to Present (1990)

Types of materials handled:

Other materials

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The wastewater is pumped from the sump and transported via a hose to the above ground portable tank located northeast of Building 688.



PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Inspect the concrete wastewater sump/tank and the washrack located outside of Building 688 for leaks. Construct a berm around the portable wastewater bowser. Collect and analyze soil samples from areas near the sump and washrack to determine if contaminants are present.

INFORMATION SUMMARY SHEET FOR SA 11**DESCRIPTION**

Study Area 11 is the location of an underground storage tank and pumphouse at Building 699.

GEOGRAPHIC INFORMATION

Figure C-48 shows the current features at SA 11 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,370/2,168,730

Area within boundaries = 2,139 square feet

Boundaries delineated using information from:

Previous reports, Civil Engineering drawings, and location visit.

CURRENT ACTIVITIES

Building 699 is a pumphouse for Base Well No. 17. The 200-gallon underground storage tank near or beneath Building 699 contained gasoline in 1986 when EG&G Idaho recommended closure. A concrete sump is located west of Building 699. An underground discharge pipe runs northeast from either the underground storage tank or the sump to a drainage ditch. Radian's site inspection was conducted on 12 December 1989.

HISTORICAL ACTIVITIES**A. Activity/Area: SUMP****Description:**

A concrete sump containing storm water is located directly west of Building 699. The lip of the tank is above-ground surface and is covered with wooden boards and a metal lid.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

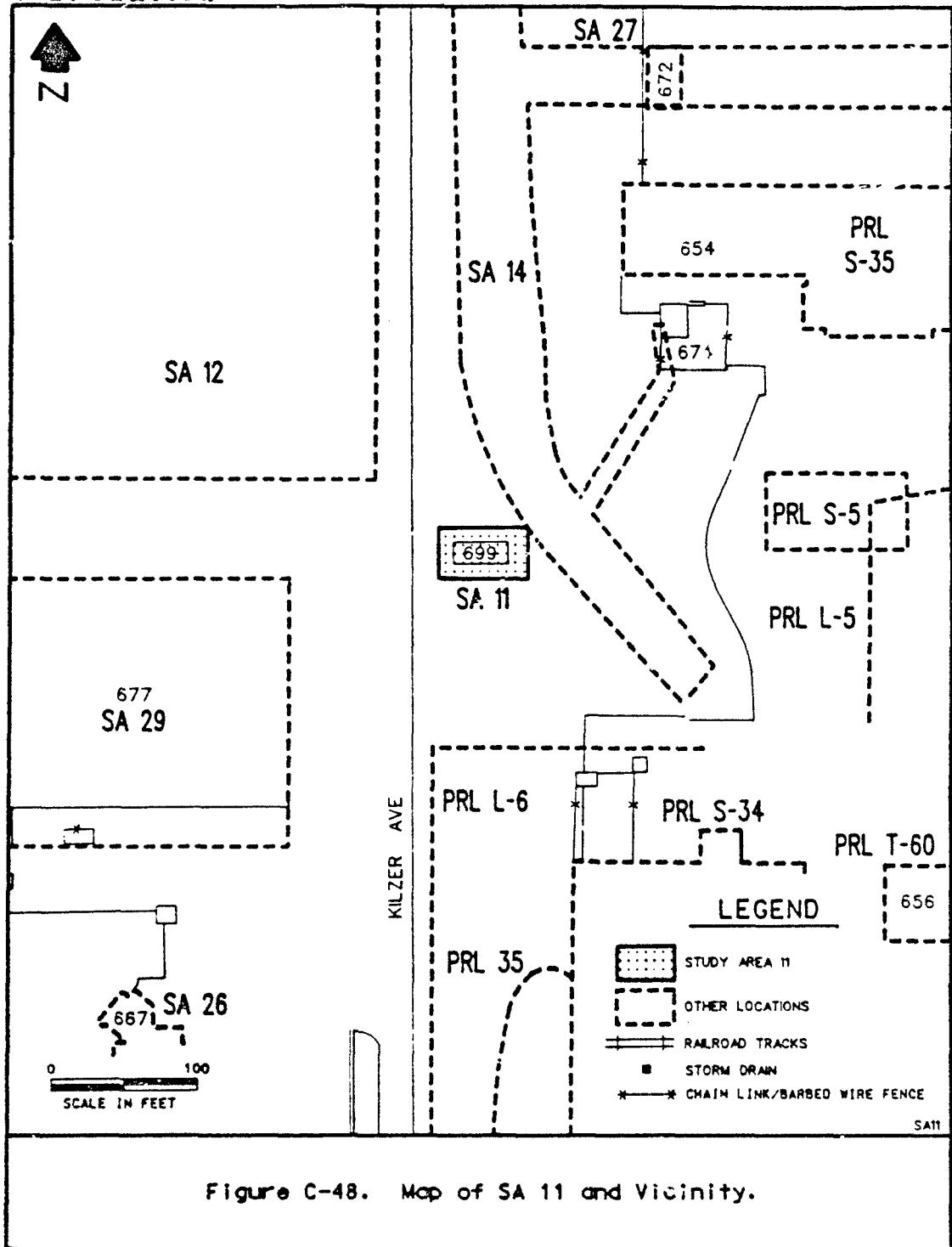


Figure C-48. Map of SA 11 and Vicinity.



B. Activity/Area: UNDERGROUND FUEL TANKS

Description:

A 200-gallon steel underground storage tank located near or beneath Building 699 contained gasoline in 1986 when EG&G Idaho recommended closure. The gasoline was used to fuel the pump for base well No. 17. It is unknown if the tank has been removed.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Fuels and oils

Specific chemicals handled:

benzene
ethyl benzene
toluene
xylanes

Disposal methods:

A discharge pipe runs from the tank northeast approximately 10 feet to a drainage ditch. It is unknown if fuel has been discharged into the ditch from the tank.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

Although a closure plan for the fuel underground storage tank was prepared in 1986, it is unknown if the tank has been removed, or if the soil was excavated.

RECOMMENDATIONS

Determine the location and status of the fuel underground storage tank. Screen soil samples surrounding and immediately below the tank and the sump. Based on the results of the screening, soil samples should be collected and analyzed for volatile aromatic organic compounds, total volatile petroleum hydrocarbons, and organic lead compounds.

INFORMATION SUMMARY SHEET FOR SA 12

DESCRIPTION

Study Area 12 is the location of an open storage lot northeast of Building 700.

GEOGRAPHIC INFORMATION

Figure C-49 shows the current features at SA 12 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,700/2,167,050

Area within boundaries = 1,709,051 square feet

Boundaries delineated using information from:
Aerial photographs and location visit.

CURRENT ACTIVITIES

Building 700 and the storage lot north of the building are used by DRMO for the receipt, storage, and resale of usable materials. The northern portion of the storage lot is used to store scrap metal.

The location is in a topographic depression. A continuous and effective barrier to entry exists at the site. Radian's site inspection was conducted on 15 December 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: BUILDING 700 STORAGE - 1987 PCB SPILL

Description:

In 1987, 1.5 to 7 gallons of PCB-contaminated oil from a transformer leaked onto the storage lot north of Building 700. Wipe samples of the oil-stained soil revealed PCB contamination. Approximately 10" of soil were removed; post-clean-up samples indicate that the remaining soil is contaminated with PCBs, volatile organic compounds, and semivolatile organic compounds.

Period of operation: 1987 to 1987

Types of materials handled:
PCBs

Specific chemicals handled:
PCB-1254
PCB-1260

Disposal methods:

Approximately 10 inches of topsoil in a 45-foot by 45-foot area was removed and disposed of off-base. A layer of plastic sheeting was placed 10 inches below the ground surface.

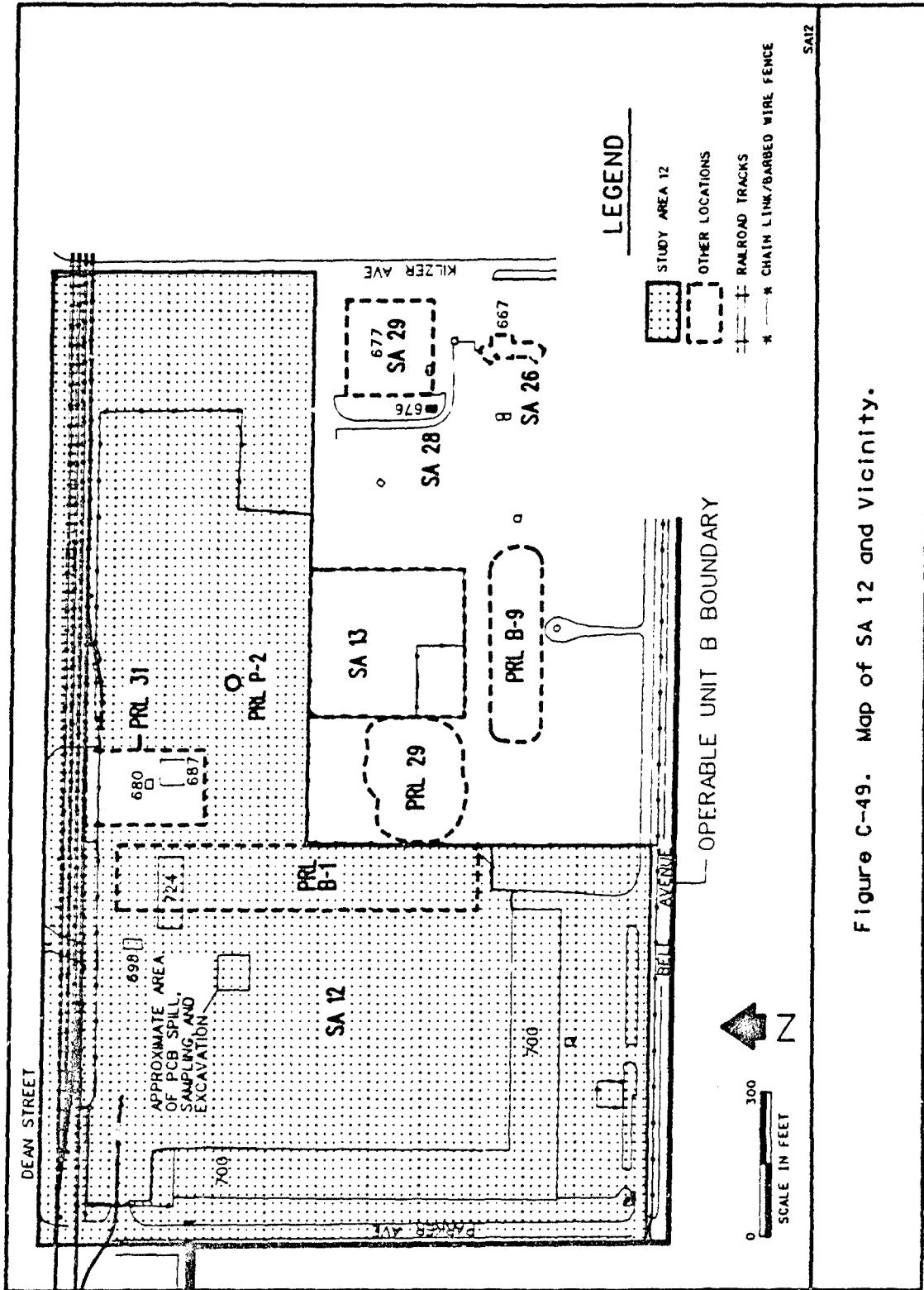


Figure C-49. Map of SA 12 and vicinity.



B. Activity/Area: BUILDING 700 STORAGE - BUILDING 700

Description:

Building 700 is the property disposal office for DRMO. Building 700 is divided into an administrative area, a warehouse area, and a receiving area.

Period of operation: 1962 to Present (1990)

Types of materials handled:

Other materials
Paints
Solvents

Specific chemicals handled:

1,1,1-trichloroethane
Isobutane
methyl chloroform
methyl ethyl ketone
methylene chloride
propane
toluene
xylene

Disposal methods:

No significant wastes are produced.

C. Activity/Area: BUILDING 700 STORAGE - BUILDING 724

Description:

Building 724 is used to recover precious metals from the scraps to be stored on the lot north of Building 700. Capacitors and transformers are also eliminated from the scrap pile in this building.

Period of operation: 1982 to Present (1990)

Types of materials handled:

PCBs
Acids
Bases
Radionucleides

Specific chemicals handled:

ammonium hydroxide
hydrochloric acid
nitric acid
potassium ferricyanide
silver nitrate

Disposal methods:

The hazardous materials removed from the scrap pile are placed in barrels. These barrels are temporarily stored on the concrete ramp that constitutes the western two-thirds of BN724.



D. Activity/Area: BUILDING 700 STORAGE - LOT EAST OF BUILDING 700

Description:

Aerial photographs from the 1960s indicate that the storage lot east of Building 700 may have contained disposal areas. The area was also used as a soil-holding area and as a material storage area during the 1960s.

Period of operation: 1962 to 1968

Types of materials handled:
Unknown

Specific chemicals handled:
No specific chemicals have been identified.

Disposal methods:
Unknown.

E. Activity/Area: BUILDING 700 STORAGE - LOT NORTH OF BUILDING 700

Description:

Historically, the storage lot north of Building 700 has been used to store usable material awaiting resale. Materials historically stored on the lot included liquid chemicals, scrap metal, and transformers.

Period of operation: 1962 to Present (1990)

Types of materials handled:
PCBs
Burn residues
Fuels and oils
Other materials
Solvents

Specific chemicals handled:
PCBs
carbon tetrachloride

Disposal methods:

Historically, transformers were emptied on the northwest edge of the storage lot near the railroad tracks.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 13 (exact boring locations are not known; Figure C-49 shows approximate area of sampling and excavation from area of PCB spill)

Odors or visual evidence of contamination noted:

Oil stains were noted on the ground surface where a PCB spill took place. "Carbonaceous material" was detected between 2 and 4 feet BGS in eight borings drilled across the storage lot.

No soil gas readings were taken.



Number of soil samples analyzed for:

Volatile organic compounds = 13
Semivolatile organic compounds/pesticides/polychlorinated biphenyls = 13
Metals = 13
Other compounds = 0

Table C-10 lists the organic compounds detected in soil samples collected from SA 12.

REMEDIAL ACTIONS

Ten inches of topsoil from the PCB spill area (see Figure C-49) were excavated and disposed of at a "certified disposal site." A layer of plastic sheeting was placed 10 inches BGS beneath the spill areas.

RECOMMENDATIONS

Drill soil borings in a grid pattern across the storage lot and collect soil samples at depths ranging from ground surface to at least 2 feet BGS to determine if historical activities on the lot have resulted in contamination of the soil.



TABLE C-9. ORGANIC COMPOUNDS DETECTED IN SOIL SAMPLES FROM SA 12

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration ug/kg (ppb)
1	Unknown	PCB-1260	0.4 (ppm)
1	Unknown	di-n-butylphthalate	31
1	Unknown	fluorene	14
1	Unknown	pyrene	15
1	Unknown	xlenes	1
10	Unknown	1,2,4-trichlorobenzene	240
10	Unknown	PCB-1254	0.6 (ppm)
10	Unknown	benzene	3
10	Unknown	benzo[a]anthracene	29
10	Unknown	benzo[a]pyrene	34
10	Unknown	benzo[g,h,i]perylene	36
10	Unknown	benzo[k]fluoranthene	86
10	Unknown	chrysene	15
10	Unknown	di-n-octylphthalate	33
10	Unknown	ethylbenzene	4
10	Unknown	fluoranthene	12
10	Unknown	indeno[1,2,3-cd]pyrene	22
10	Unknown	phenol	12
10	Unknown	pyrene	32
10	Unknown	toluene	16
10	Unknown	xlenes	16
11	Unknown	benzene	9
11	Unknown	benzo[k]fluoranthene	26
11	Unknown	di-n-octylphthalate	16
11	Unknown	ethylbenzene	9
11	Unknown	phenol	15
11	Unknown	toluene	57
11	Unknown	xlenes	33
1A	Unknown	PCB-1260	0.2 (ppm)
1A	Unknown	benzene	13
1A	Unknown	benzo[a]pyrene	39
1A	Unknown	benzo[k]fluoranthene	63
1A	Unknown	butylbenzylphthalate	32
1A	Unknown	di-n-octylphthalate	86
1A	Unknown	ethylbenzene	7
1A	Unknown	phenol	36
1A	Unknown	toluene	9
1A	Unknown	xlenes	27
1B	Unknown	anthracene	11



TABLE C-9. (Continued)

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration ug/kg (ppb)
1B	Unknown	benzene	7
1B	Unknown	benzo[a]anthracene	51
1B	Unknown	benzo[a]pyrene	37
1B	Unknown	benzo[b]fluoranthene	47
1B	Unknown	benzo[g,h,i]perylene	10
1B	Unknown	benzo[k]fluoranthene	33
1B	Unknown	chrysene	41
1B	Unknown	di-n-octylphthalate	54
1B	Unknown	ethylbenzene	5
1B	Unknown	fluoranthene	35
1B	Unknown	pentachlorophenol	47
1B	Unknown	phenanthrene	19
1B	Unknown	phenol	24
1B	Unknown	pyrene	91
1B	Unknown	toluene	36
1B	Unknown	xlenes	20
2	Unknown	PCB-1260	0.5 (ppm)
2	Unknown	anthrancene	27
2	Unknown	di-n-butylphthalate	29
2	Unknown	di-n-octylphthalate	120
2	Unknown	fluoranthene	28
2	Unknown	fluorene	15
2	Unknown	pyrene	32
2	Unknown	xlenes	2
3	Unknown	PCB-1260	0.3 (ppm)
3	Unknown	di-n-butylphthalate	21
3	Unknown	di-n-octylphthalate	28
3	Unknown	ethylbenzene	1
3	Unknown	fluoranthene	12
3	Unknown	fluorene	12
3	Unknown	pyrene	14
3	Unknown	toluene	7
3	Unknown	xlenes	6
4	Unknown	1,2,4-trichlorobenzene	43
4	Unknown	PCB-1260	3 (ppm)
4	Unknown	benzo[g,h,i]perylene	36
4	Unknown	di-n-butylphthalate	53
4	Unknown	di-n-octylphthalate	23
4	Unknown	fluoranthene	20



TABLE C-9. (Continued)

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration ug/kg (ppb)
4	Unknown	pyrene	23
4	Unknown	toluene	6
4	Unknown	xlenes	5
5	Unknown	1,2,4-trichlorobenzene	14
5	Unknown	PCB-1260	5 (ppm)
5	Unknown	di-n-butylphthalate	82
5	Unknown	di-n-octylphthalate	120
5	Unknown	fluoranthene	38
5	Unknown	phenanthrene	26
5	Unknown	pyrene	44
5	Unknown	xlenes	5
6	Unknown	1,2,4-trichlorobenzene	46
6	Unknown	PCB-1260	10.9 (ppm)
6	Unknown	di-n-butylphthalate	38
6	Unknown	di-n-octylphthalate	22
6	Unknown	fluoranthene	27
6	Unknown	fluorene	22
6	Unknown	phenanthrene	12
6	Unknown	phenol	26
6	Unknown	pyrene	30
6	Unknown	xlenes	4
7	Unknown	1,2,4-trichlorobenzene	34
7	Unknown	PCB-1260	5.3 (ppm)
7	Unknown	benzo[a]pyrene	210
7	Unknown	benzo[b]fluoranthene	280
7	Unknown	benzo[g,h,i]perylene	180
7	Unknown	butylbenzylphthalate	30
7	Unknown	chrysene	130
7	Unknown	di-n-butylphthalate	81
7	Unknown	di-n-octylphthalate	48
7	Unknown	dibenzo[a,b]anthracene	57
7	Unknown	fluorene	11
7	Unknown	indeno[1,2,3-cd]pyrene	300
7	Unknown	naphthalene	16
7	Unknown	phenanthrene	184
7	Unknown	pyrene	18
7	Unknown	xlenes	6
8	Unknown	1,2,4-trichlorobenzene	100
8	Unknown	PCB-1260	12.4 (ppm)



TABLE C-9. (Continued)

Sample Location	Depth BGS (feet)	Chemical Detected	Concentration ug/kg (ppb)
8	Unknown	di-n-butylphthalate	170
8	Unknown	di-n-octylphthalate	110
8	Unknown	ethylbenzene	2
8	Unknown	phenanthrene	13
8	Unknown	phenol	31
8	Unknown	pyrene	18
8	Unknown	toluene	3
8	Unknown	xylanes	7
9	Unknown	1,2,4-trichlorobenzene	29
9	Unknown	PCB-1260	1 (ppm)
9	Unknown	di-n-butylphthalate	33
9	Unknown	di-n-octylphthalate	22
9	Unknown	xylanes	5

BGS = Below ground surface.



INFORMATION SUMMARY SHEET FOR SA 13

DESCRIPTION

Study Area 13 is the location of the Civil Engineering storage yard.

GEOGRAPHIC INFORMATION

Figure C-50 shows the current features at SA 13 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,270/2,167,900

Area within boundaries = 99,625 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

The area is used by Civil Engineering to store miscellaneous non-hazardous materials. The yard is completely surrounded by fencing.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 5 January 1990.

HISTORICAL ACTIVITIES

A. Activity/Area: OPEN STORAGE YARD

Description:

Materials have been stored in the Civil Engineering Storage Yard since 1962. Most of the material was reportedly non-hazardous, but transformers were reportedly stored in the yard during the 1960s.

Period of operation: 1962 to Present (1990)

Types of materials handled:

PCBs

(The transformers may have contained oils contaminated with PCBs.)

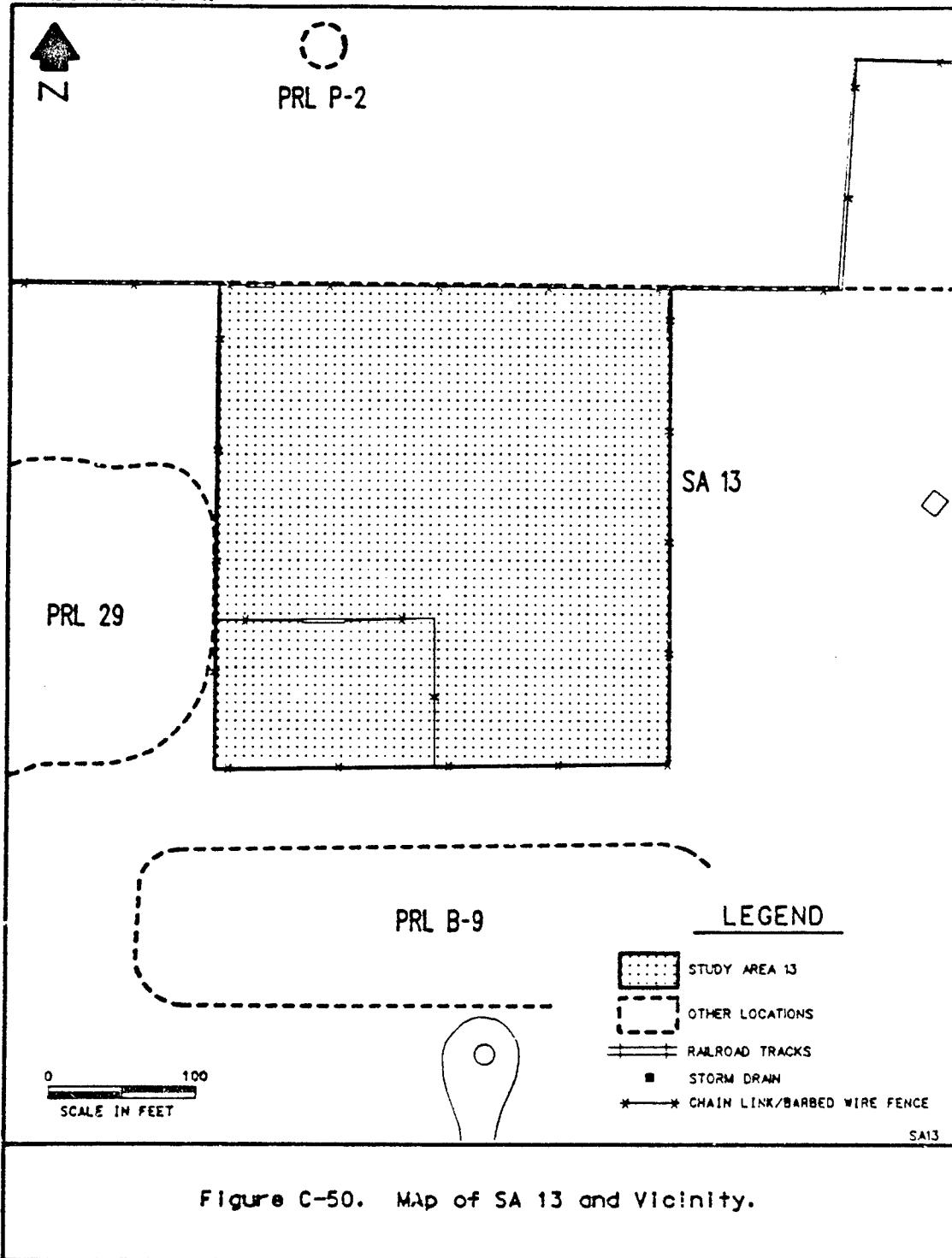
Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are generated.

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PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect near-surface soil samples to determine if contamination is present.



INFORMATION SUMMARY SHEET FOR SA 14

DESCRIPTION

Study Area 14 is the location of the ditch west of Building 654.

GEOGRAPHIC INFORMATION

Figure C-51 shows the current features at SA 14 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,809/2,168,740

Area within boundaries = 80,023 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

The unlined ditch is part of the base storm drainage system. It receives storm water through an underground pipe from south of the ditch. It also receives storm water from a paved lot northeast of the ditch. Another underground pipe leads from the vicinity of Building 699 to the ditch and may be connected to an underground storage tank.

The location is in a topographic depression. Radian's site inspection was conducted on 12 December 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: BUILDING 654 EFFLUENT

Description:

An antifreeze tank, diesel fuel tank, and an oil tank were located west of Building 654 approximately where this east-west ditch began. The tanks were placed on a concrete pad surrounded by a berm. Building 654 houses ground power equipment repair operations. A solvent spray booth was also located at Building 654. Any of these operations may have released contaminants to the east-west ditch.

Period of operation: 1976 to 1986

Types of materials handled:

Fuels and oils
Semivolatile organic compounds (unspecified)
Solvents

Specific chemicals handled:
Stoddard solvent

Disposal methods:

Runoff in the ditch flowed west to a north-south ditch which directed the flow north to Magpie Creek.

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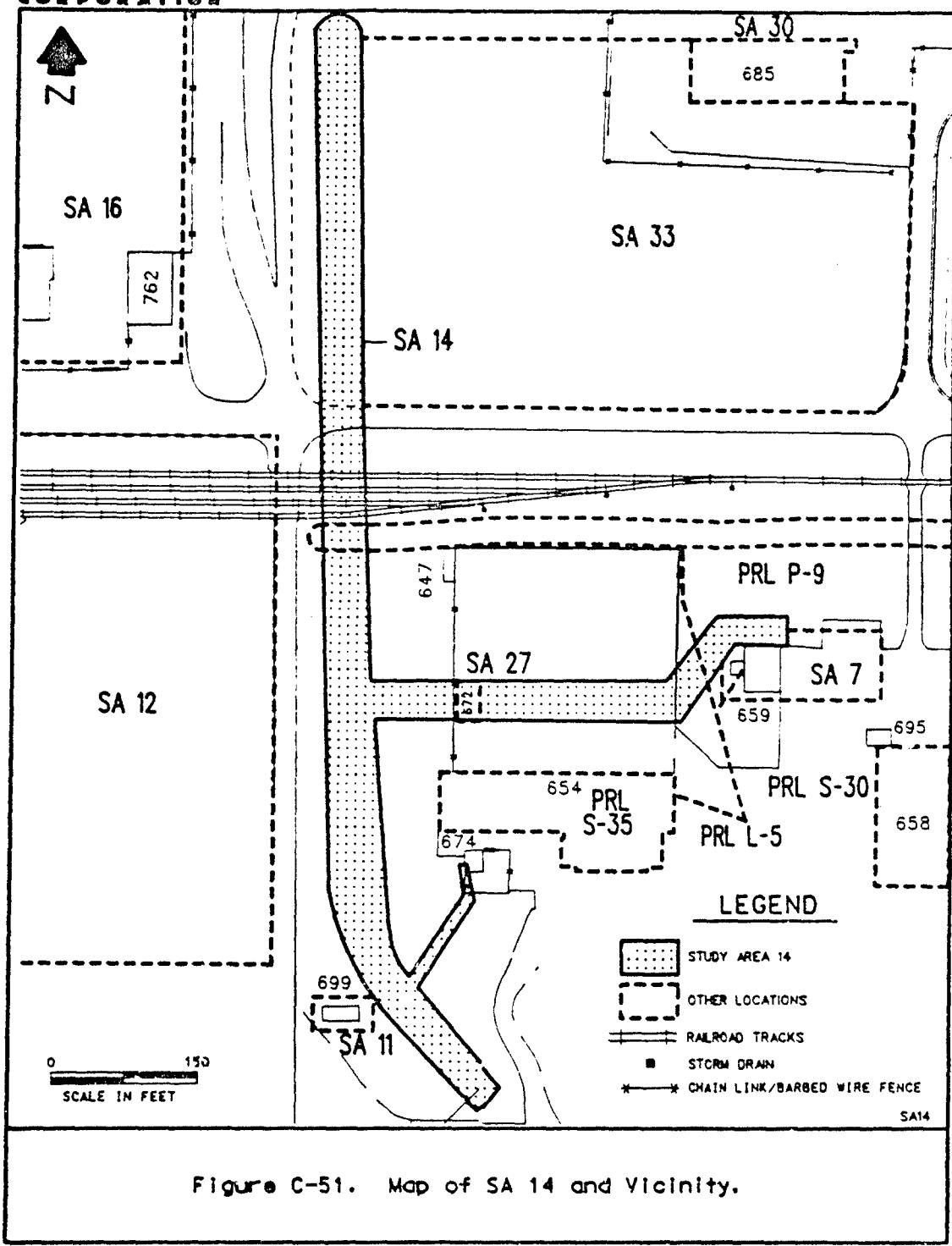


Figure C-51. Map of SA 14 and Vicinity.



► B. Activity/Area: BUILDING 659 EFFLUENT

Description:

The east-west ditch received wastewater and spilled fuel from Building 659, a washrack, and fueling/defueling area for fuel tank trucks.

Period of operation: 1953 to 1978

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The flow in that part of the ditch travelled west to the north-south part of the ditch, then north to Magpie Creek.

► C. Activity/Area: PRL S-5 EFFLUENT

Description:

The ditch received wastewater from the IWTP #2 (PRL S-5) building that housed the flotation system. The ditch also received the effluent from the treatment plant.

Period of operation: 1957 to 1974

Types of materials handled:

Fuels and oils

Heavy metals

Paints

Solvents

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The effluent from the IWTP #2 was discharged to the ditch. The water then flowed north, eventually entering into Magpie Creek.

► D. Activity/Area: UST EFFLUENT

Description:

A 200-gallon underground storage tank that contained gasoline from approximately 1966 to at least 1986 was located 10 feet south of the ditch. An underground discharge line runs northeast from the tank to the ditch.

Period of operation: 1966 to Present (1990)

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.



Disposal methods:
The discharge from the tank.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect sediment samples from bottom of ditch. Analyze for contaminants associated with IWTP No. 2 (PRL S-5) and those associated with the underground gasoline storage tank by Building 699: halogenated and aromatic volatile compounds total petroleum hydrocarbons, semivolatile organic compounds, oil and grease, and metals.



INFORMATION SUMMARY SHEET FOR SA 15

DESCRIPTION

Study Area 15 is the location of the former chemical storage area at the northwest corner of Lot 10.

GEOGRAPHIC INFORMATION

Figure C-52 shows the current features at SA 15 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,440/2,167,630

Area within boundaries = 509,469 square feet

Boundaries delineated using information from:
Location visit and aerial photographs.

CURRENT ACTIVITIES

Lot 10 is a paved storage area operated by the Material Storage Branch (DSFS). It is used for general storage of non-hazardous materials such as generators, metal parts, portable shelters, and clean empty aircraft fuel tanks.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 12 December 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: CHEMICAL STORAGE

Description:

The northwest corner of Lot 10 was used for storage of hazardous materials in 1969 and 1970. In 1970, there was an explosion and fire caused by the mixture of incompatible chemicals.

Period of operation: 1969 to 1970

Types of materials handled:

Other materials
Paints
Semivolatile organic compounds (unspecified)
Solvents (unspecified)

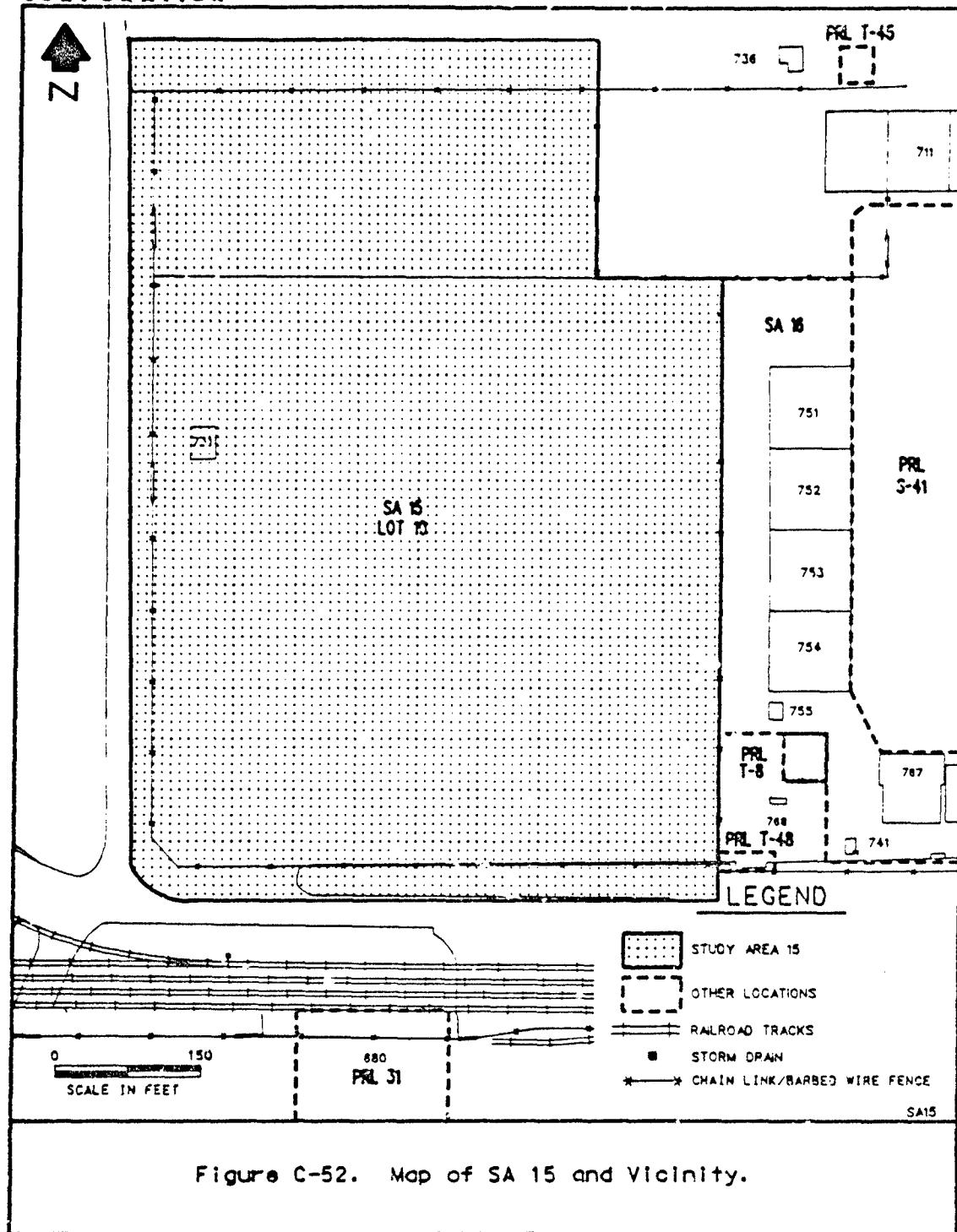
Specific chemicals handled:

DDT

Disposal methods:

Burned wastes from the fire in 1970 was transported to the burial pits north of Building 704.

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PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect and analyze soil samples from the northwest corner of the lot to determine if contaminants were released to the soil during the 1970 fire.

INFORMATION SUMMARY SHEET FOR SA 16

DESCRIPTION

Study Area 16 is the location of the aircraft maintenance hangars along the perimeter of Mat K.

GEOGRAPHIC INFORMATION

Figure C-53 shows the current features at SA 16 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,110/2,168,260

Area within boundaries = 368,672 square feet

Boundaries delineated using information from:
Location visit and interviews.

CURRENT ACTIVITIES

Operations performed in the hangars located on the south and west perimeter of Mat K include aircraft fuel testing, aircraft fuel tank purging, aircraft fueling and defueling. A system of above-ground and below ground pipelines transport fuel and oil to the hangars; liquid wastes are collected by an underground industrial wastewater line.

The location is in a topographic depression. A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 12 December 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: FUEL SPILL AREA

Description:

On 3 July 1989, approximately 3000 gallons of fuel spilled onto the ground surface immediately north of PRL T-8 at Mat K.

Period of operation: 1989

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Foam was sprayed on the spill and vermiculite was used to soak up the spill. The contaminated vermiculite was containerized in barrels and disposed of off-site.

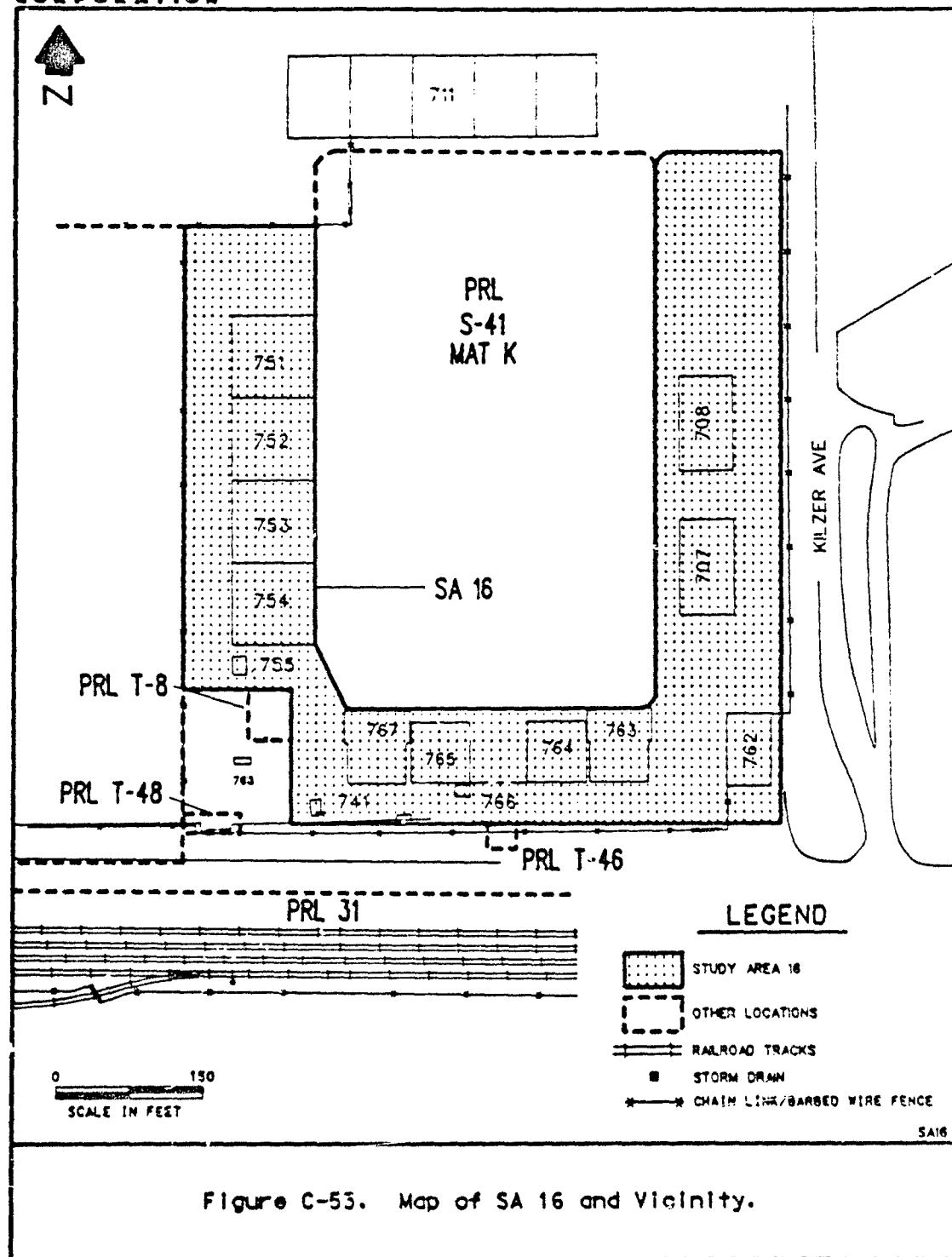


Figure C-53. Map of SA 16 and Vicinity.

B. Activity/Area: MAINTENANCE - HANGARS

Description:

The maintenance hangars located on the southern and western perimeter of Mat K are used to repair aircraft and leak-test aircraft fuel tanks. JP-5 fuel is used to purge the fuel tanks and JP-4 fuel is used to run operational checks of the aircraft.

Period of operation: 1963 to Present (1990)

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Liquid wastes that fall to the floor are washed down with water. The contaminated water is then collected in floor drains at the rear of the hangars. The drains are connected to the IWL. When an airplane is defueled in the hangars, the fuel is collected in above-ground portable tanks.

C. Activity/Area: SLUSHING OIL TANKS

Description:

Two 4,000-gallon steel slushing oil tanks are located on the south side of Mat K. Four-inch underground pipelines connect the tanks to two of the four maintenance shelters located on the south side of Mat K. These tanks are no longer used and are currently filled with water.

Period of operation: 1968 to 1986

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Pipelines led from each "slushing oil station" within the maintenance hangars back to the "slushing oil" tanks. After the oil is used in the hangars, it was returned to the slushing oil tanks. When the oil became unusable, it was taken away by truck.

D. Activity/Area: UNDERGROUND FUEL PIPELINES

Description:

Underground pipelines connect the JP-4 and JP-5 aircraft fuel storage tanks to each of the maintenance hangars. A contaminated fuel pipeline also leads from each maintenance hangar to an underground contaminated fuel tank located west of Mat K.

Period of operation: 1963 to Present (1990)

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Any fuel spills would most likely collect in the floor drains located in the rear of each maintenance dock. The floor drains discharge to the IWL. Contaminated fuel from each maintenance dock is transported via underground pipelines to a storage tank.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

The IWL east and south of the location has been repaired. The fuel spill on Mat K in July 1989 was cleaned up with foam and vermiculite.

RECOMMENDATIONS

Inspect the integrity of the underground fuel lines to determine if past releases have occurred. Conduct a soil investigation if leaks are found. Remove the slushing oil tanks. Collect and analyze soil samples from the excavation around the tanks. Also, collect and analyze soil samples from the unlined ditch immediately south of Mat K. All soil samples should be analyzed for volatile and semi-volatile organic compounds, fuel hydrocarbons, hydrocarbons, and metals.

INFORMATION SUMMARY SHEET FOR SA 17

DESCRIPTION

Study Area 17 is the location of the former oil storage yard east of Building 688.

GEOGRAPHIC INFORMATION

Figure C-54 shows the current features at SA 17 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,740/2,169,250

Area within boundaries = 12,800 square feet

Boundaries delineated using information from:
Civil Engineering drawings and aerial photographs.

CURRENT ACTIVITIES

The area is paved with asphalt. Soil and gravel, which appears to be used for construction, are stored on the pavement. Radian's site inspection was conducted on 4 January 1990.

HISTORICAL ACTIVITIES

A. Activity/Area: OUTDOOR OIL STORAGE, YARD 1

Description:

The area was a fenced-in open oil storage yard from 1955 to 1974. A small shed, Building T-687, was located in the southeast corner of the yard.

Period of operation: 1955 to 1974

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

PREVIOUS FIELD INVESTIGATIONS

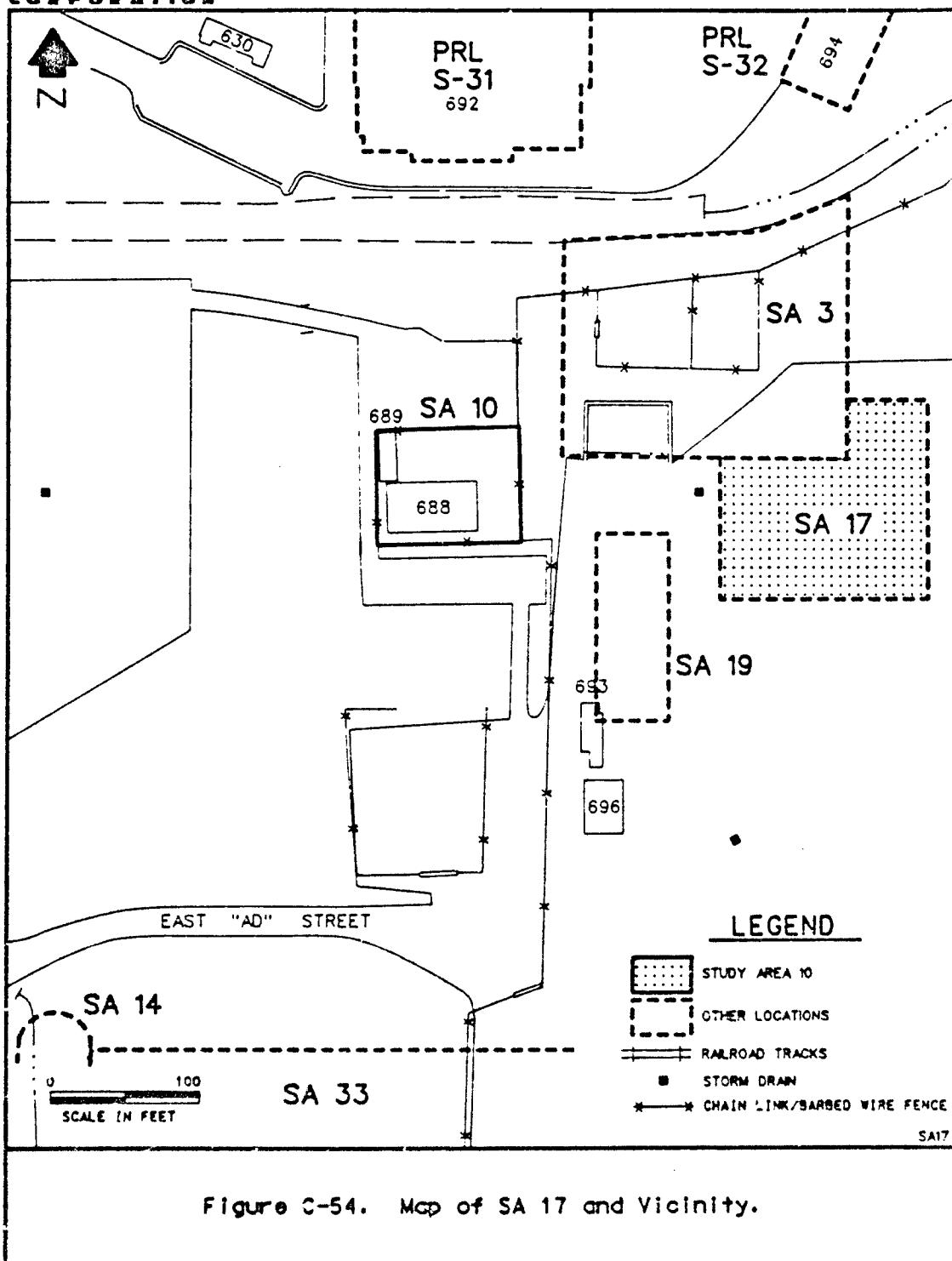
Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.





REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect and analyze soil samples to determine if contamination is present.

INFORMATION SUMMARY SHEET FOR SA 18

DESCRIPTION

Study Area 18 is the location of the former oil storage yard northwest of Building 656.

GEOGRAPHIC INFORMATION

Figure C-55 shows the current features at SA 18 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,350/2,169,050

Area within boundaries = 9,400 square feet

Boundaries delineated using information from:
Civil Engineering drawings and aerial photographs.

CURRENT ACTIVITIES

The area is paved with asphalt. There are several sheds which are not associated with hazardous material storage located within the boundaries. Radian's site inspection was conducted on 4 January 1990.

HISTORICAL ACTIVITIES

A. Activity/Area: OUTDOOR OIL STORAGE, YARD 2

Description:

The area was an outdoor oil storage yard enclosed by a fence from approximately 1957 to 1975.
A small shed was located in the southeast corner of the yard.

Period of operation: 1957 to 1975

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

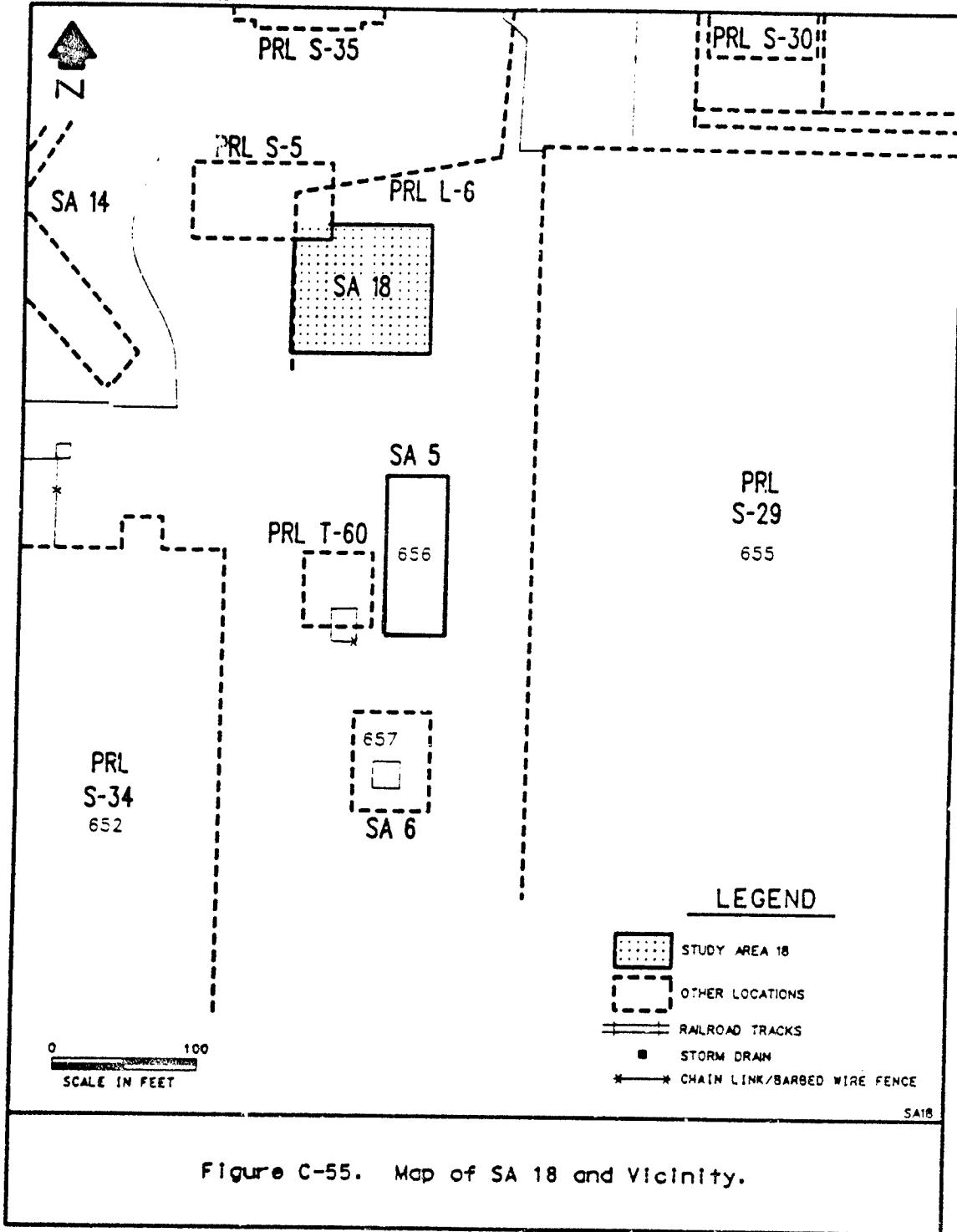


Figure C-55. Map of SA 18 and Vicinity.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect and analyze soil samples to determine if contamination is present.

INFORMATION SUMMARY SHEET FOR SA 19**DESCRIPTION**

Study Area 19 is the location of a former spray booth at Building T-690.

GEOGRAPHIC INFORMATION

Figure C-56 shows the current features at SA 19 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,710/2,169,110

Area within boundaries = 2,000 square feet

Boundaries delineated using information from:
Civil Engineering drawings and aerial photographs.

CURRENT ACTIVITIES

The area is currently paved with asphalt. Nothing is stored within the study area boundaries. Radian's site inspection was conducted on 4 January 1990.

HISTORICAL ACTIVITIES**A. Activity/Area: SPRAY BOOTH, BUILDING T-690****Description:**

Building T-690, a spray booth, was located within the study area from 1951 to 1974.

Period of operation: 1951 to 1974**Types of materials handled:**

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

PREVIOUS FIELD INVESTIGATIONS

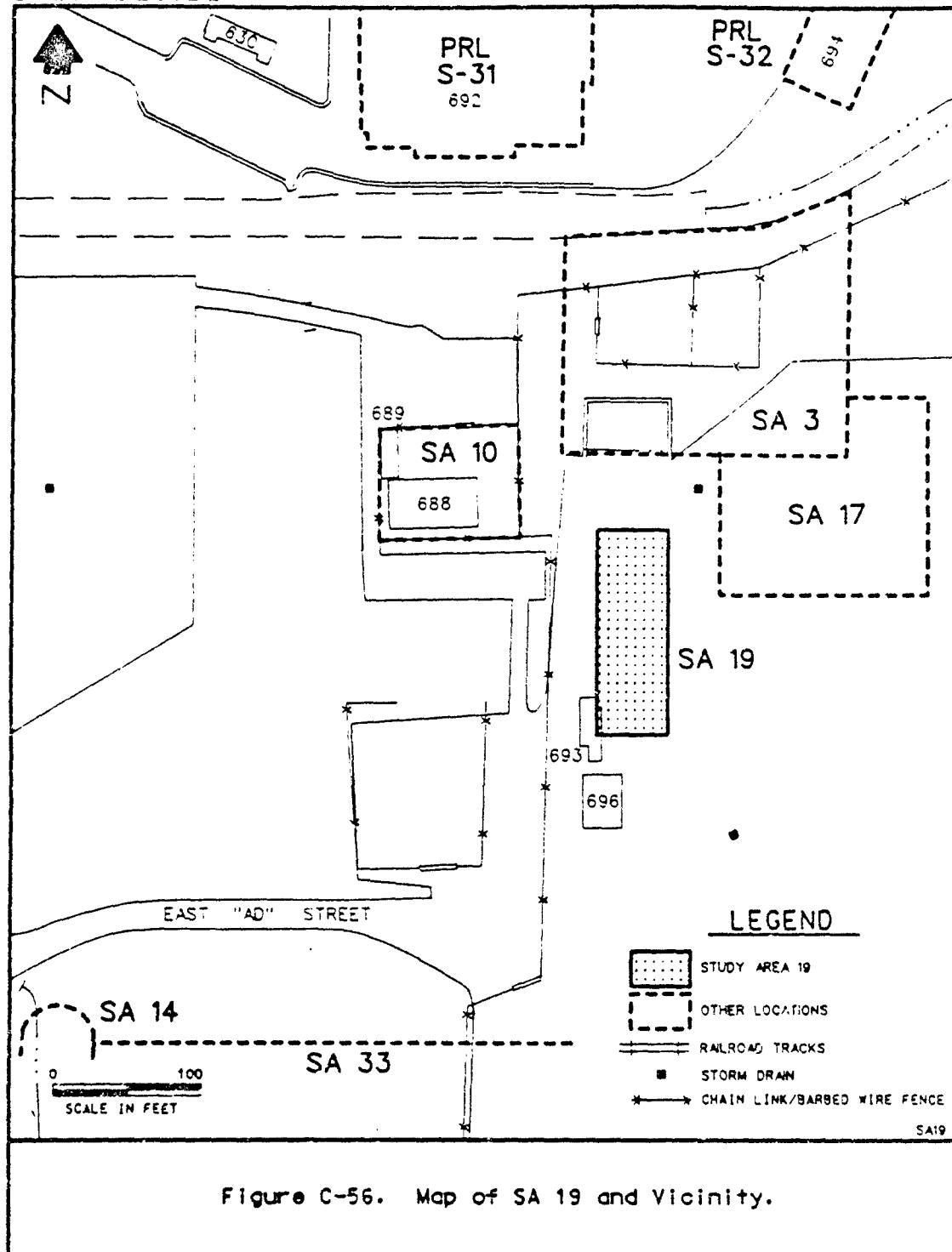
Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

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REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Collect and analyze soil samples to determine if contamination is present.

INFORMATION SUMMARY SHEET FOR SA 20

DESCRIPTION

Study Area 20 is the location of a storage yard for gas cylinders and paint.

GEOGRAPHIC INFORMATION

Figure C-57 shows the current features at SA 20 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 357,300/2,169,020

Area within boundaries = 791 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

The Building 631 area is used to store gas cylinders on wooden pallets or within open-sided roofed sheds. Also included in the Building 631 area is a hazardous waste storage shed that is used to store paint.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 13 November 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: GAS STORAGE

Description:

Compressed gas cylinders are stored on wooden pallets or in open-sided roofed sheds.

Period of operation: 1968 to Present (1990)

Types of materials handled:

Other materials

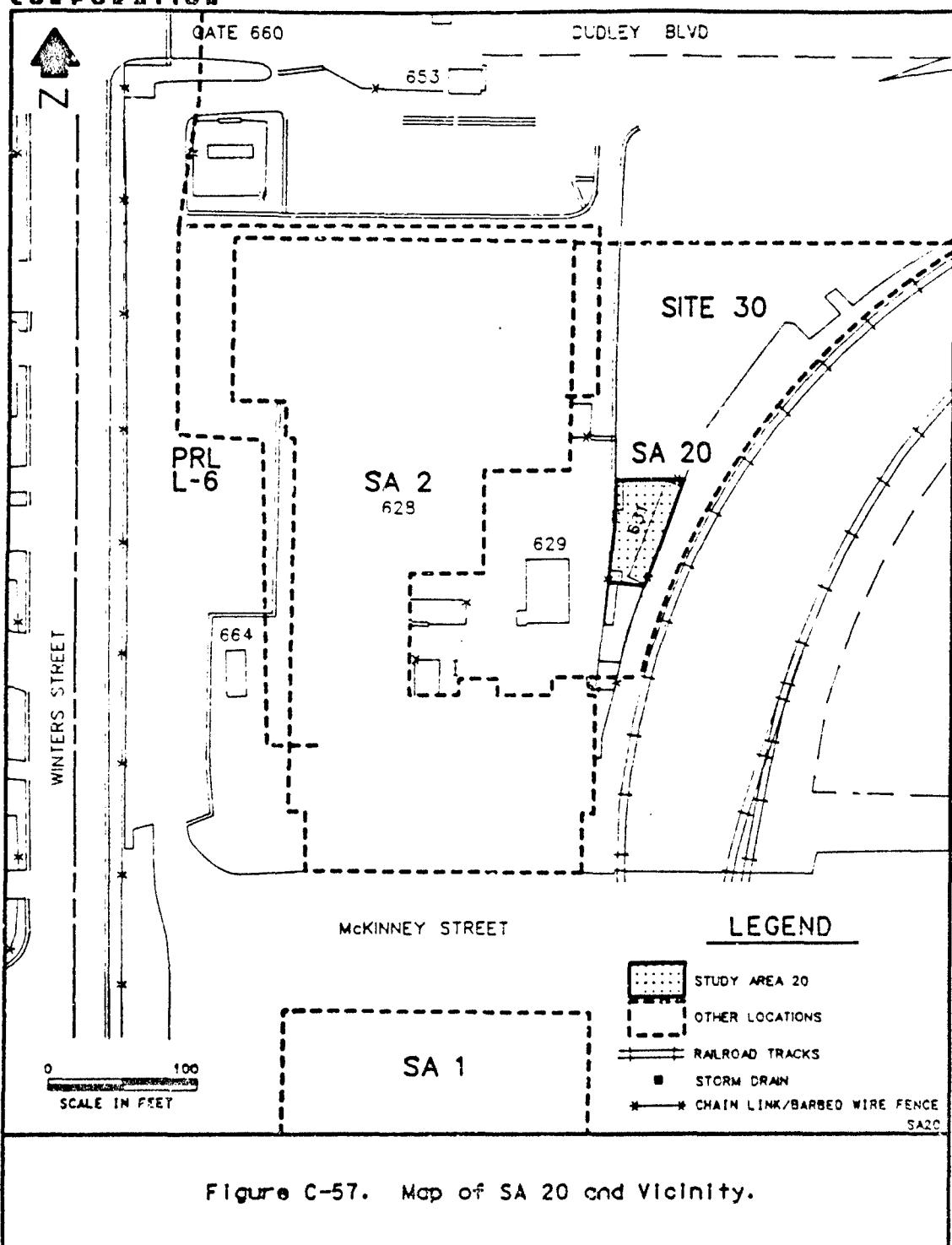
Specific chemicals handled:

hydrogen sulfide
nitrous oxide

Disposal methods:

No wastes are produced.

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B. Activity/Area: PAINT STORAGE

Description:

Paint is stored in a new mobile hazardous waste storage shed.

Period of operation: 1989 to Present (1990)

Types of materials handled:

Paints

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are produced.

C. Activity/Area: SOLVENT DISPOSAL

Description:

Trichloroethene, Freon®, diethylether, and low-level radioactive wastewater was reportedly disposed of on the ground at PRL 30, which includes Building 631.

Period of operation: 1960 to 1980

Types of materials handled:

Radionuclides
Solvents

Specific chemicals handled:

diethyl ether
Freon®
trichloroethene

Disposal methods:

The solvents were poured onto the pavement and allowed to evaporate.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 1 (Boring drilled to 10 feet BGS by McLaren as part of investigation of Site 30; Appendix B)

Odors or visual evidence of contamination noted:

None

Maximum recorded soil gas reading = 1 parts per million by volume (at 10 feet BGS).

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.



RECOMMENDATIONS

Investigate the actives at Building 631 as part of the RI of PRL 30 and Study Area 2 (Building 628).

INFORMATION SUMMARY SHEET FOR SA 21**DESCRIPTION**

Study Area 21 is the location of the vehicle refuel and maintenance facility at Building 603.

GEOGRAPHIC INFORMATION

Figure C-58 shows the current features at SA 21 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,590/2,169,820

Area within boundaries = 8,688 square feet

Boundaries delineated using information from:
Location visit and construction drawings.

CURRENT ACTIVITIES

Building 603 is a Refuel Vehicle Maintenance Facility. The building is an open garage with offices and restrooms. A fuel/water separator and waste fuel tank are located below ground west of the building. Radian's site inspection was conducted on 12 December 1989.

HISTORICAL ACTIVITIES**A. Activity/Area: BUILDING 603****Description:**

Building 603 is an open garage used for servicing fuel-containing tank trucks. All solvent waste, wastewater, and fuel enters drains in the floor and travels west through an underground trough to a fuel/water separator outside the building.

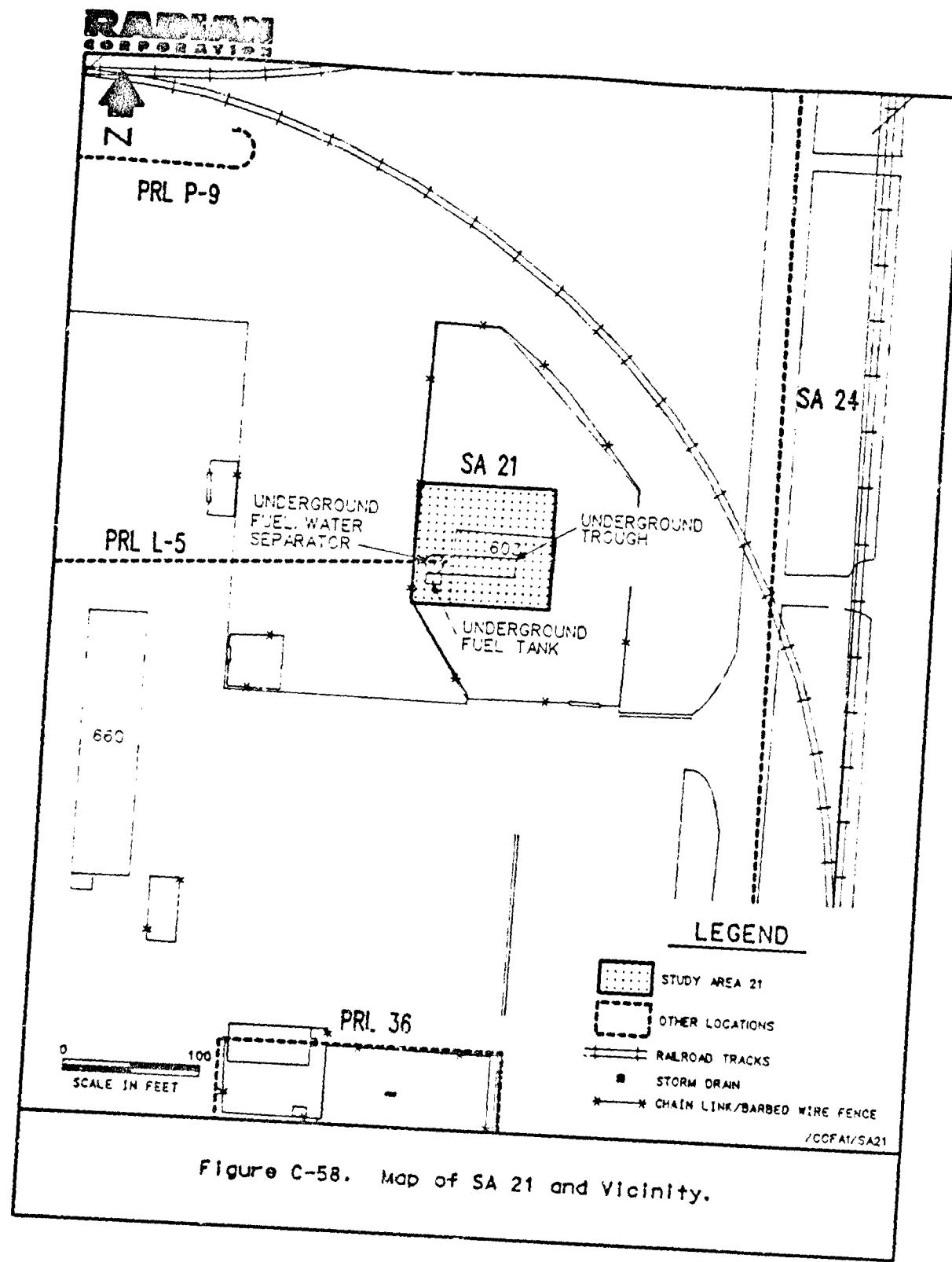
Period of operation: 1984 to present (1990)

Types of materials handled:

Fuels and oils
Paints
Solvents

Specific chemicals handled:

1,1,1-trichloroethane	2-butanone
butanol	butoxy ethanol
butyl cellosolve	cellosolve acetate
dichloromethane	ethanol
ethyl ether	ethylene glycol
ethylene glycol monobutyl ether	Freon®
heptane	isobutane
isobutyl acetate	isopropanol
lead chromate	methanol
n-butyl acetate	naphtha
nitrous oxide	propane
sodium bicarbonate	toluene
xylene	zinc chromate



Disposal methods:

All solvent waste, wastewater, and fuel enters drains in the center of the garage and travels through a trough to a fuel/water separator located outside the building.

B. Activity/Area: SEPARATOR AND UST

Description:

An underground fuel/water separator located west of Building 603 receives waste from Building 603. It was reported by EG&G Idaho that the tank, separator and trough were installed in 1983. In 1987, a leak test was performed on the underground steel storage tank and it passed the test. EG&G Idaho recommended in 1987 that the separator be lined with materials resistant to petroleum hydrocarbons; this recommended work has not been performed because steel tanks are generally resistant to hydrocarbons and, therefore, lining was not necessary. The fuel flows south to a 1000 gallon underground waste fuel storage tank.

Period of operation: 1984 to Present (1990)

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Waste fuel is stored in the UST until removal to another location on base approximately every 90 days. The wastewater from the fuel/water separator flows through the IWL to the IWTP for treatment.

C. Activity/Area: STORAGE LOT

Description:

Aerial photos indicate storage of miscellaneous materials. It could not be determined what types and how much materials were stored. Storage activities occurred intermittently from 1946 to 1984.

Period of operation: 1946 to 1984

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

It is recommended that a soil gas investigation be performed along the west side of building 603, where the IWL (PRL L-5) conveys wastewater from the underground fuel/water separator to IWTP No. 1. It is also recommended that an integrity test be conducted on the fuel/water separator and underground waste fuel tank.

INFORMATION SUMMARY SHEET FOR SA 22

DESCRIPTION

Study Area 22 is the location of the computer software laboratory at Building 618.

GEOGRAPHIC INFORMATION

Figure C-59 shows the current features at SA 22 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 356,690/2,169,780

Area within boundaries = 73,207 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

Building 618 houses the Integrated Support Facility, which is part of the Engineering Division. The building contains both laboratory and office space. The work done in the laboratories involves computer software. Radian's site inspection was conducted on 31 October 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: WAREHOUSE - BUILDING 620

Description:

A supply warehouse, Building 620, was located within the study area boundaries before Building 618 was built. There is no record of any hazardous material use or storage in Building 620.

Period of operation: 1946 to 1982

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No waste was generated.

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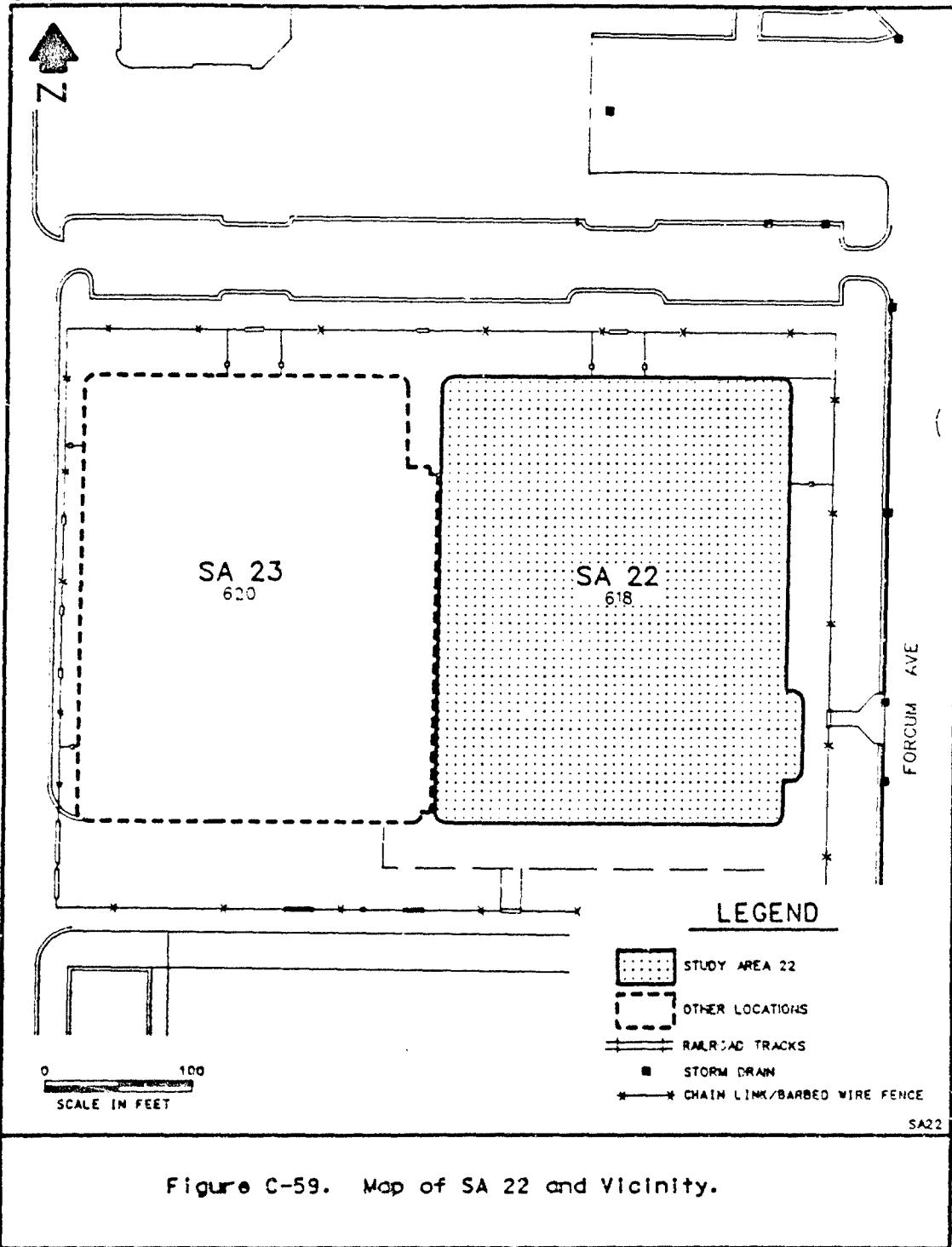


Figure C-59. Map of SA 22 and vicinity.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

No further action is required because no hazardous materials are currently used and there have been no known historical releases.

INFORMATION SUMMARY SHEET FOR SA 23

DESCRIPTION

Study Area 23 is the location of the computer microchip design and testing shop at Building 620.

GEOGRAPHIC INFORMATION

Figure C-60 shows the current features at SA 23 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 356,690/2,169,540

Area within boundaries = 71,012 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

Building 620 has housed the Integrated Support Facility since it was occupied in 1987. Building 620 contains both office and laboratory space. Most of the work in the laboratories involve computers and does not require the use of hazardous materials. Three areas that use hazardous materials are 1) the Clean Room, 2) the Fiberoptics Laboratory, and 3) the Electronics Laboratory. Part of the building is occupied by the "Red Force Unit," which is a "classified" operation. Radian's site inspection was conducted on 11 October 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: CLEAN ROOM

Description:

The clean room will be used to manufacture microchips. It is not fully operational. Presently, etching of chips is performed in this unit.

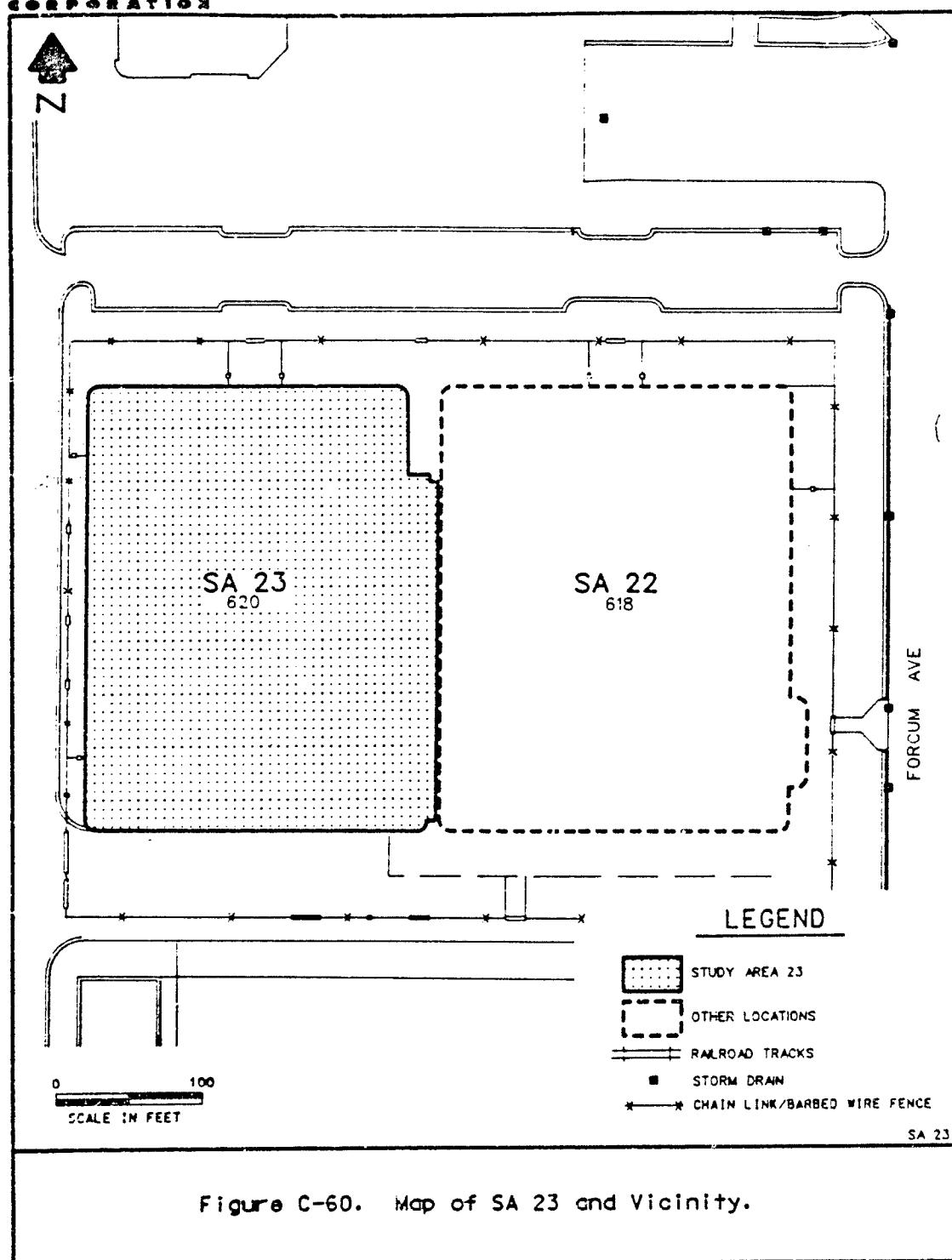
Period of operation: 1987 to Present (1990)

Types of materials handled:

Acids
Solvents

Specific chemicals handled:

1,1,1-trichloroethane	1,1,2,2-tetrachloroethene
acetic acid	acetone
catechol	dodecylbenzene sulfonic acid
ethylene glycol monoethyl ether	hexamethyldisilazane
n-butyl acetate	nitric acid
phosphoric acid	polyisoprene
stoddard solvent	xylene





Disposal methods:

Acids are diluted and poured down a drain connected to the IWL. Alcohol, acetone and other solvents are used in small amounts and evaporate in the fume hood. Xylenes based chemicals are in storage. They have not been used, but there is a sump that will handle any xylene-based waste.

B. Activity/Area: ELECTRONICS LABORATORY

Description:

Solvents, in small amounts, are used to clean electronic parts.

Period of operation: 1987 to Present (1990)

Types of materials handled:

Solvents

Specific chemicals handled:

ammonia
dichlorodifluoromethane
ethanol
ethylene glycol monobutyl ether
Freon® 113
isopropyl alcohol
methanol
methylene chloride
tetraalkyl silicates

Disposal methods:

All hazardous materials are used in small amounts and evaporate as they are used.

C. Activity/Area: FIBEROPTICS

Description:

Most of the work in the laboratory involves lasers; some organic solvents are used to clean equipment.

Period of operation: 1987 to Present (1990)

Types of materials handled:

Solvents

Specific chemicals handled:

1,1,1-trichloroethane
acetone
hexachloroethane
methanol

Disposal methods:

The chemicals are used in small amounts and evaporate for the most part. There is a sink connected to the IWL that handles any necessary disposal.



D. Activity/Area: WAREHOUSE - BUILDING 622

Description:

A supply warehouse, Building 622, was located within the study area boundaries before Building 620 was built. There is no record of any hazardous material used or stored in Building 622.

Period of operation: 1946 to 1982

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes were generated.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

No further action is required because the potential for release of hazardous materials is low and there have been no known historical releases.

INFORMATION SUMMARY SHEET FOR SA 24

DESCRIPTION

Study Area 24 is the location of an equipment storage warehouse at Building 651.

GEOGRAPHIC INFORMATION

Figure C-61 shows the current features at SA 24 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,450/2,170,370

Area within boundaries = 839,837 square feet

Boundaries delineated using information from:
Location visit, interviews, and historical files.

CURRENT ACTIVITIES

Building 651 is a storage area for large generators and other large equipment. The building is divided into 4 bays. Bay B is the location of a radiation storage facility for radar/radiation meters.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 12 December 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: BUILDING 651, BAY A

Description:

Building 651, Bay A, historically contained a spray booth for the application of foam for packaging in the 1970s. During an unknown time, Bay A also was the location of radar testing and repair, but is now located in Building 1042.

Period of operation: Unknown

Types of materials handled:

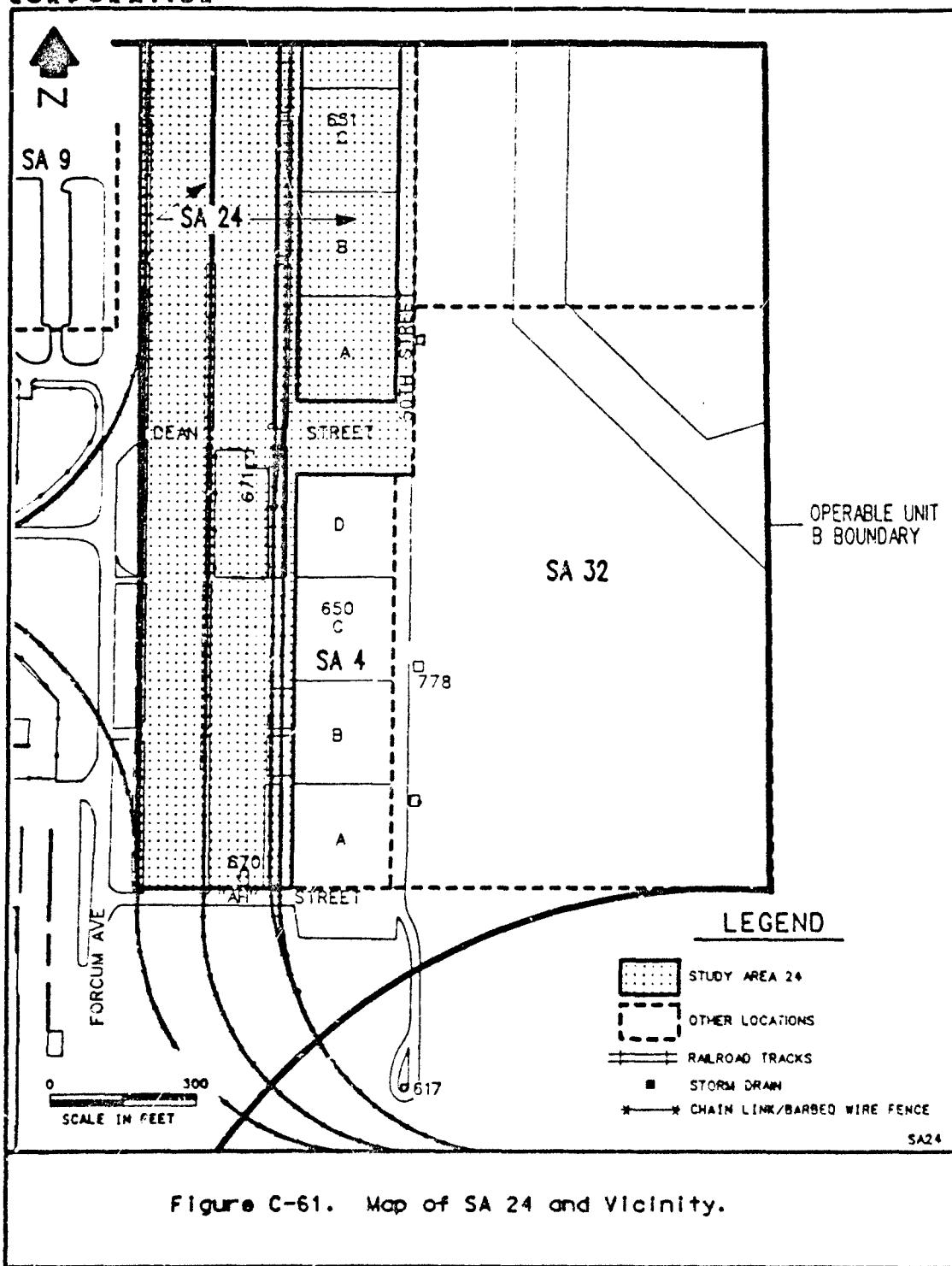
Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are generated.



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B. Activity/Area: BUILDING 651, BAY B

Description:

Building 651, Bay B, is the location of a caged and locked storage area for radar/radiation meters and equipment.

Period of operation: Unknown to Present (1990)

Types of materials handled:

Nonhazardous

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are generated.

C. Activity/Area: BUILDING 651, BAY C

Description:

A spray booth was reportedly located in Building 651. The overhead vent and body/eye wash are still located in the bay. The drain was never located, but storage is in the area that could be covering the drain. No additional information is available.

Period of operation: Unknown

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

D. Activity/Area: BUILDINGS 650/651 STORAGE LOT

Description:

Storage lot for large generators and other large equipment is located west of Buildings 650 and 651.

Period of operation: 1946 to Present (1990)

Types of materials handled:

Nonhazardous

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are generated.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

No further action is required because there is no evidence that contaminants have been released to the environment.



INFORMATION SUMMARY SHEET FOR SA 25

DESCRIPTION

Study Area 25 is the location of a reported fuel spill near Building 665.

GEOGRAPHIC INFORMATION

Figure C-62 shows the current features at SA 25 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 357,720/2,168,250

Area within boundaries = 175 square feet

Boundaries delineated using information from:
Previous reports.

These boundaries are assumed because the location of the reported JP-4 spill is unknown.

CURRENT ACTIVITIES

Building 665 is a small open-sided building containing radar equipment. The building is used in conjunction with Building 667, where radomes are calibrated and repaired. Radian's site inspection was conducted on 17 October 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: REPORTED JP-4 SPILL.

Description:

CH2M Hill reported a 4000-gallon spill of JP-4 occurred at a storage tank near Building 665. The fuel was reportedly burned off. The exact location of the spill was not reported and no confirmational evidence of the spill has been found.

Period of operation: Unknown

Types of materials handled:

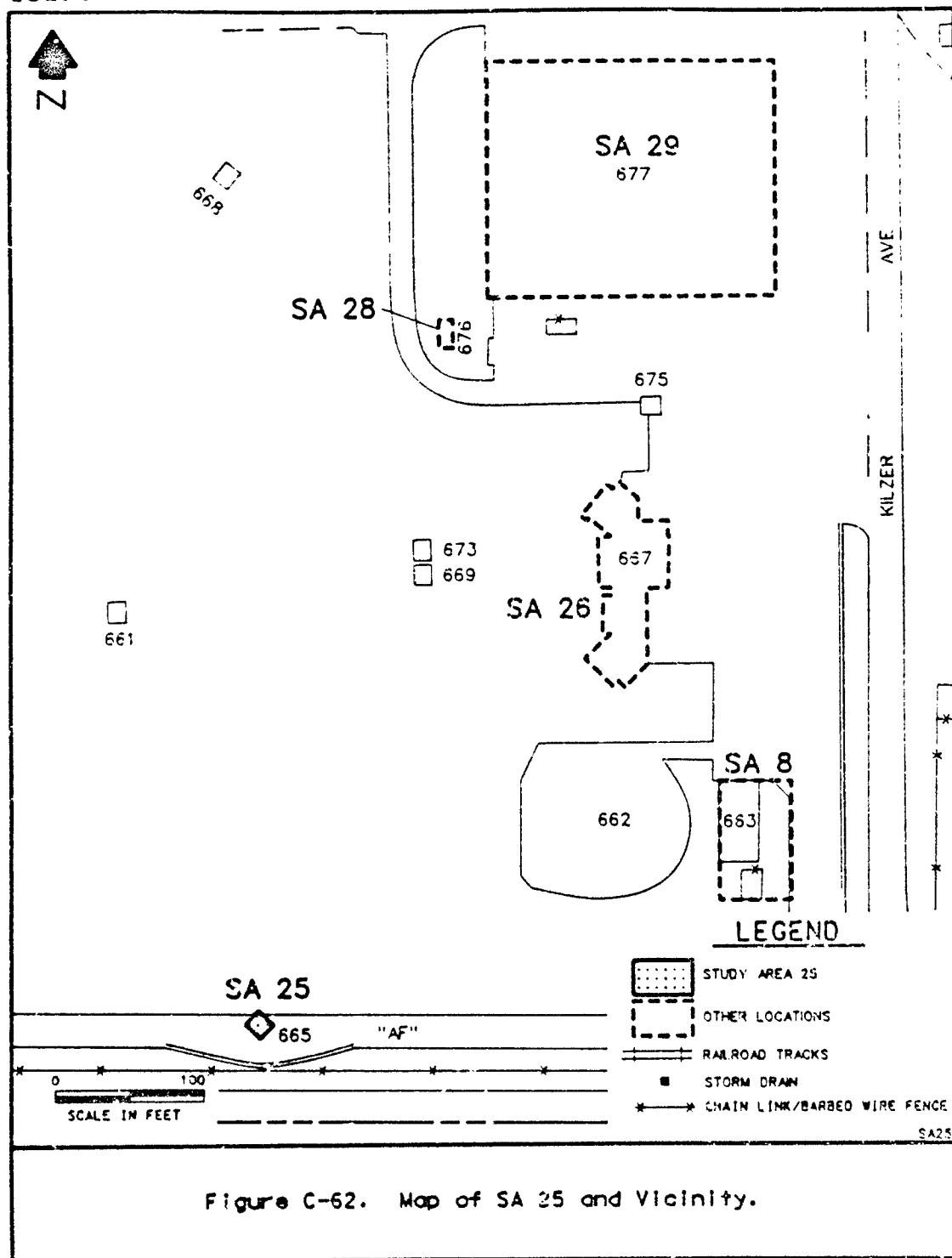
Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The fuel was reportedly burned off.



PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

No further action is required because there is no confirmational evidence of a JP-4 spill in the vicinity of Building 665.

INFORMATION SUMMARY SHEET FOR SA 26

DESCRIPTION

Study Area 26 is the location of the radome repair unit at Building 667.

GEOGRAPHIC INFORMATION

Figure C-63 shows the current features at SA 26 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,010/2,168,500

Area within boundaries = 4,637 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

Building 667 houses two operations, the Radome Repair Unit and the Mobil Depot Maintenance Unit. Hazardous materials are not used in Building 667. Radian's site inspection was conducted on 17 October 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: BUILDING 667

Description:

Building 667 houses two operations: The Radome Repair Unit and the Mobil Depot Maintenance Unit. Hazardous materials have not been handled either historically or currently in Building 667.

Period of operation: 1957 to Present

Types of materials handled:

Nonhazardous

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

No wastes are generated.

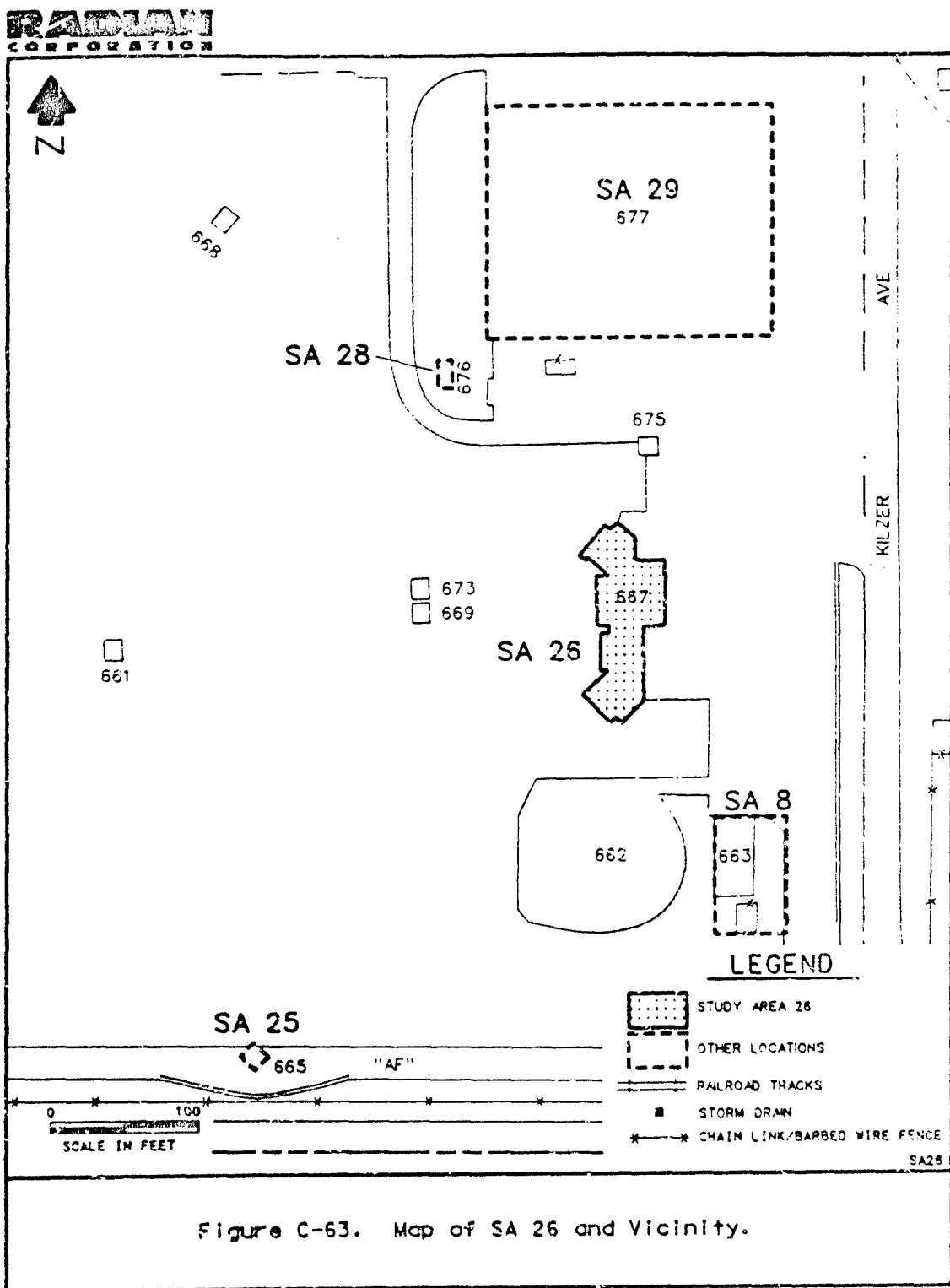


Figure C-63. Map of SA 26 and Vicinity.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

No further action is required because there is no evidence that hazardous materials have been handled in the building.

INFORMATION SUMMARY SHEET FOR SA 27

DESCRIPTION

Study Area 27 is the location of offices at Building 672.

GEOGRAPHIC INFORMATION

Figure C-64 shows the current features at SA 27 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,700/2,168,860

Area within boundaries = 954 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

Building 672 is an office building. Hazardous chemicals are not handled nor stored in the building. Radian's site inspection was conducted on 14 November 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: BUILDING 672

Description:

Building 672 consists of office space. The building was investigated because the unit that occupies the building handles hazardous materials. However, these operations take place outside of the building and are being investigated as part of PPL S-35.

Period of operation: Unknown to Present

Types of materials handled:
Non-hazardous

Specific chemicals handled:
No specific chemicals have been identified.

Disposal methods:
No wastes are generated.

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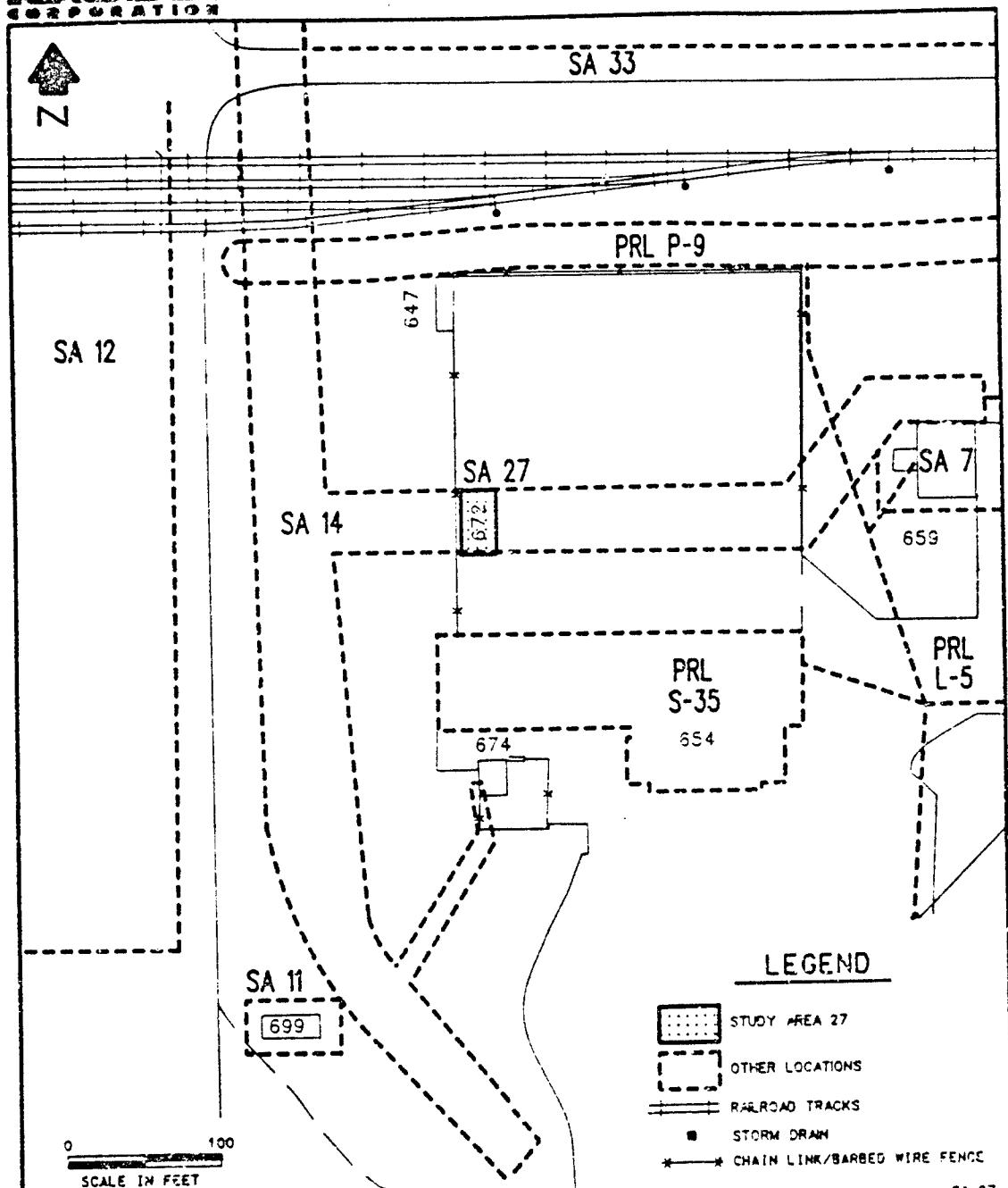


Figure C-64. Map of SA 27 and vicinity.



PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

No further action is required because there is no evidence that hazardous materials have been handled in the building.

INFORMATION SUMMARY SHEET FOR SA 28

DESCRIPTION

Study Area 28 is the location of a storage shed at Building 676.

GEOGRAPHIC INFORMATION

Figure C-65 shows the current features at SA 28 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,180/2,168,380

Area within boundaries = 168 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

All that remains of Building 676 is the concrete foundation. The area is not being used. Radian's site inspection was conducted on 17 October 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: BUILDING 676

Description:

Building 676 was a small storage shed. It was demolished in 1988. The building was investigated because it was associated with the operations in Building 677. However, there is no evidence that hazardous materials were stored in Building 676

Period of operation: 1972 to Present

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

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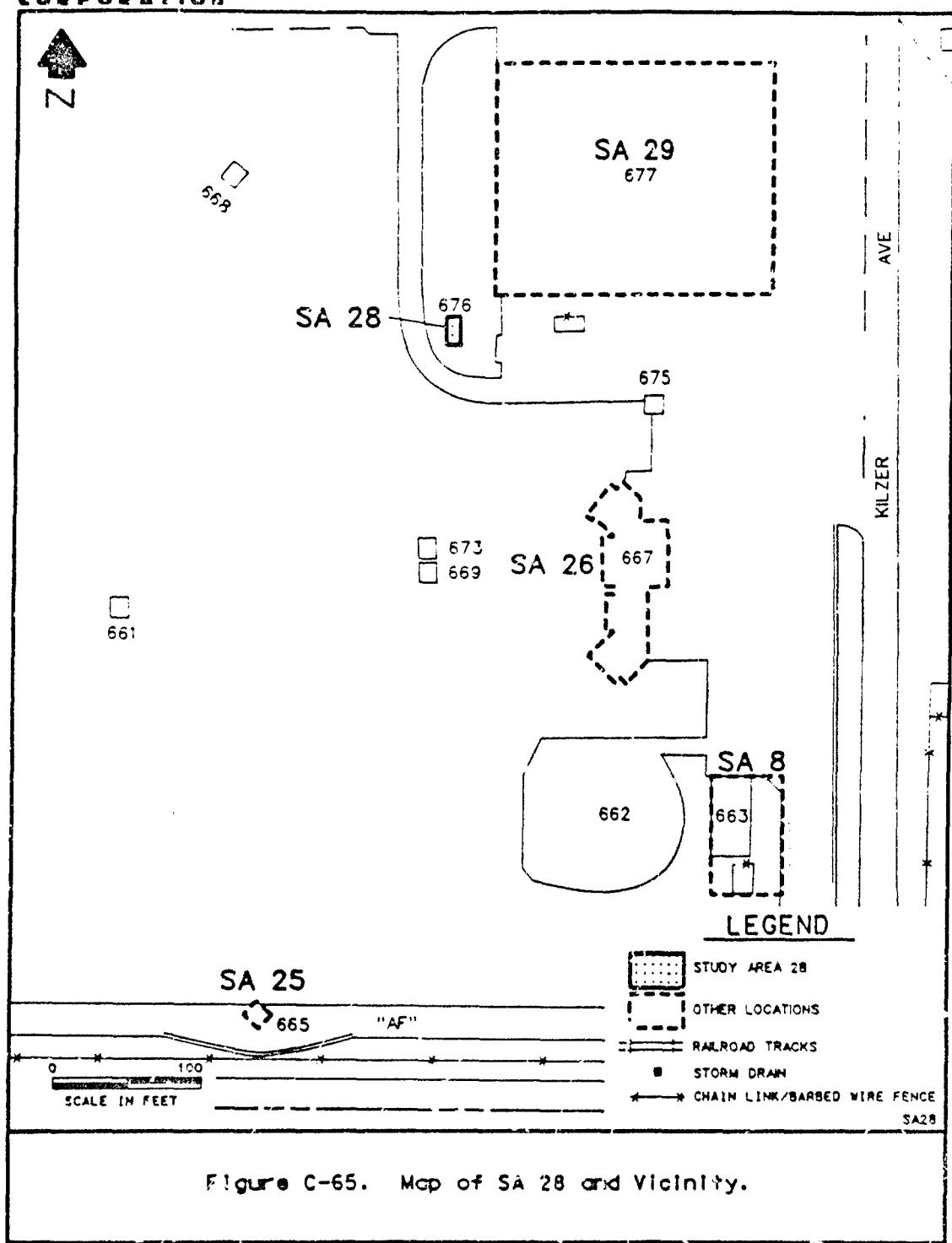


Figure C-65. Map of SA 28 and Vicinity.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

No further action is required because there is no evidence that hazardous materials have been handled in the building.

INFORMATION SUMMARY SHEET FOR SA 29

DESCRIPTION

Study Area 29 is the location of an equipment testing and calibration shop at Building 677.

GEOGRAPHIC INFORMATION

Figure C-66 shows the current features at SA 29 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,260/2,138,500

Area within boundaries = 34,954 square feet

Boundaries delineated using information from:
Location visit.

CURRENT ACTIVITIES

Building 677 is used to test and calibrate a variety of measurement devices including flow meters, thermometers, radiation detectors, and manometers.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 17 October 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: BUILDING 677, FLOW METER ROOM

Description:

Flow meters are tested and calibrated in this room. JP-4 and hydraulic fluids flow through the room during testing.

Period of operation: Unknown to Present

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

The waste fluids are pumped outside into an underground storage tank

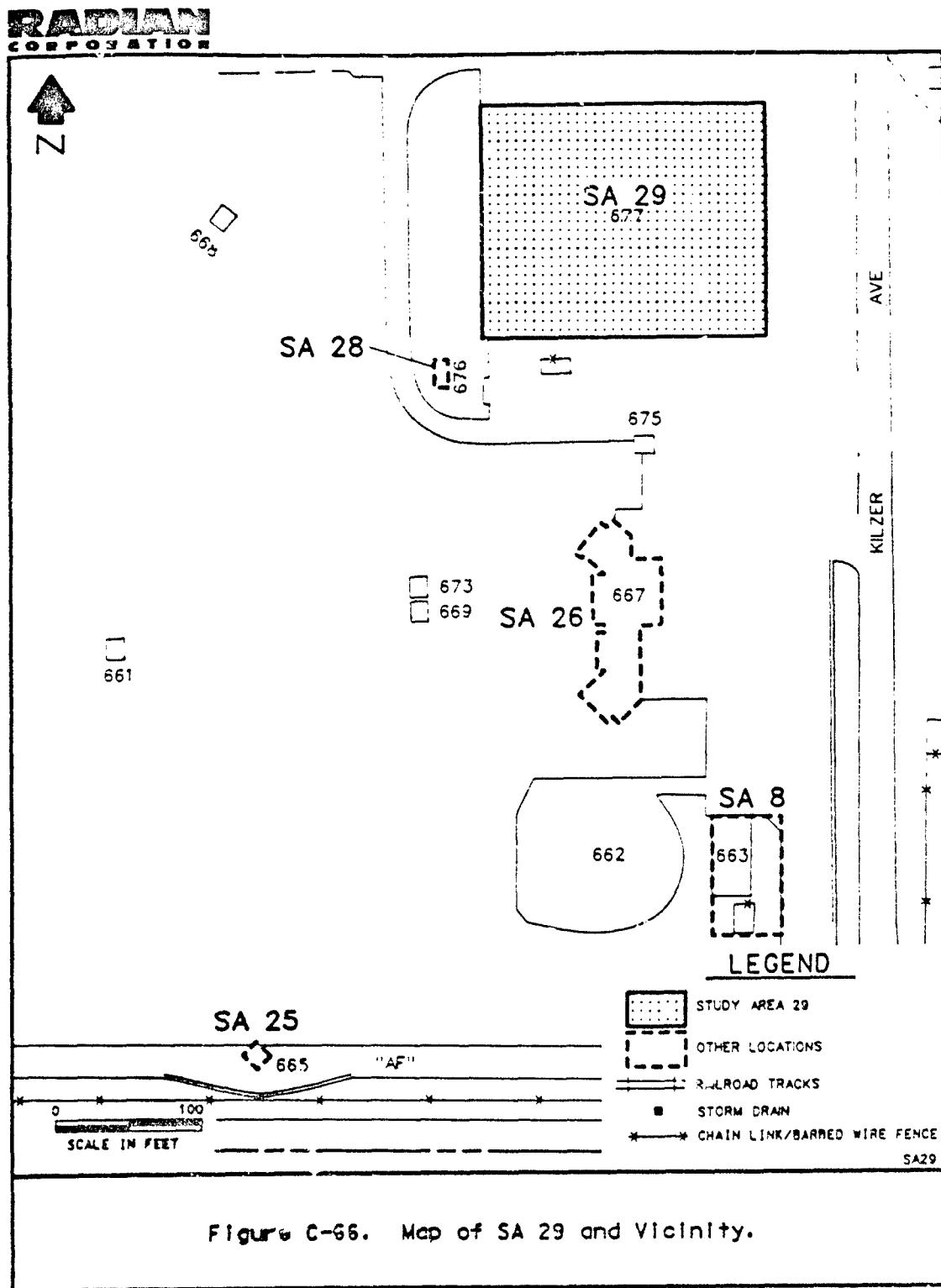


Figure C-66. Map of SA 29 and Vicinity.

B. Activity/Area: BUILDING 677, GENERAL CALIBRATION

Description:

Private contractors test and calibrate equipment throughout Building 677. This unit includes all of Building 677, except the Flow Meter, Mercury, and Radiation Rooms.

Period of operation: Unknown to Present

Types of materials handled:

Solvents

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Collected by DRMO.

C. Activity/Area: BUILDING 677, MERCURY ROOM

Description:

Elemental mercury is removed from manometers and put into hazardous waste containers for disposal.

Period of operation: Unknown to Present

Types of materials handled:

Heavy metals

Specific chemicals handled:

mercury

Disposal methods:

The mercury is collected by DRMO.

D. Activity/Area: BUILDING 677, RADIATION ROOM

Description:

Radiation detectors are tested and calibrated in this portion of Building 677.

Period of operation: Unknown

Types of materials handled:

Radionuclides

Specific chemicals handled:

cesium

plutonium

Disposal methods:

No wastes were generated.

E. Activity/Area: UNDERGROUND STORAGE TANKS NEAR BUILDING 677

Description:

Four underground fuel tanks store hydraulic fluid and jet fuel for use in the Flow Meter Testing Room. All of the tanks are constructed of steel and were installed in approximately 1977. In 1987, EG&G Idaho performed leak tests on the tanks, and all passed.

Period of operation: Unknown

Types of materials handled:

Fuels and oils

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Waste hydraulic fluid and jet fuel is stored in an underground tank, which is periodically emptied by DRMO for disposal.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Soil samples should be collected adjacent to the USTs and along the perimeter of Building 677 to determine if contaminants have been released to the environment.

INFORMATION SUMMARY SHEET FOR SA 30

DESCRIPTION

Study Area 30 is the location of an engine repair shop at Building 685.

GEOGRAPHIC INFORMATION

Figure C-67 shows the current features at SA 30 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,350/2,169,170

Area within boundaries = 10,812 square feet

Boundaries delineated using information from:
Aerial photographs and interviews.

CURRENT ACTIVITIES

Personnel within Building 685 construct storm drains, concrete and asphalt sidewalks, chain link fences, and install street signs. Emergency generators are cleaned in the building. Radian's site inspection was conducted on 31 October 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: ELECTRIC POWER PRODUCTION

Description:

Personnel within Building 685 service, repair, and maintain gasoline and diesel driven engines, aircraft arresting systems, well and deluge pump engines. Generators are used for backup electrical power to commercial power. These operations occur outside of Building 685.

Period of operation: 1974 to Present (1990)

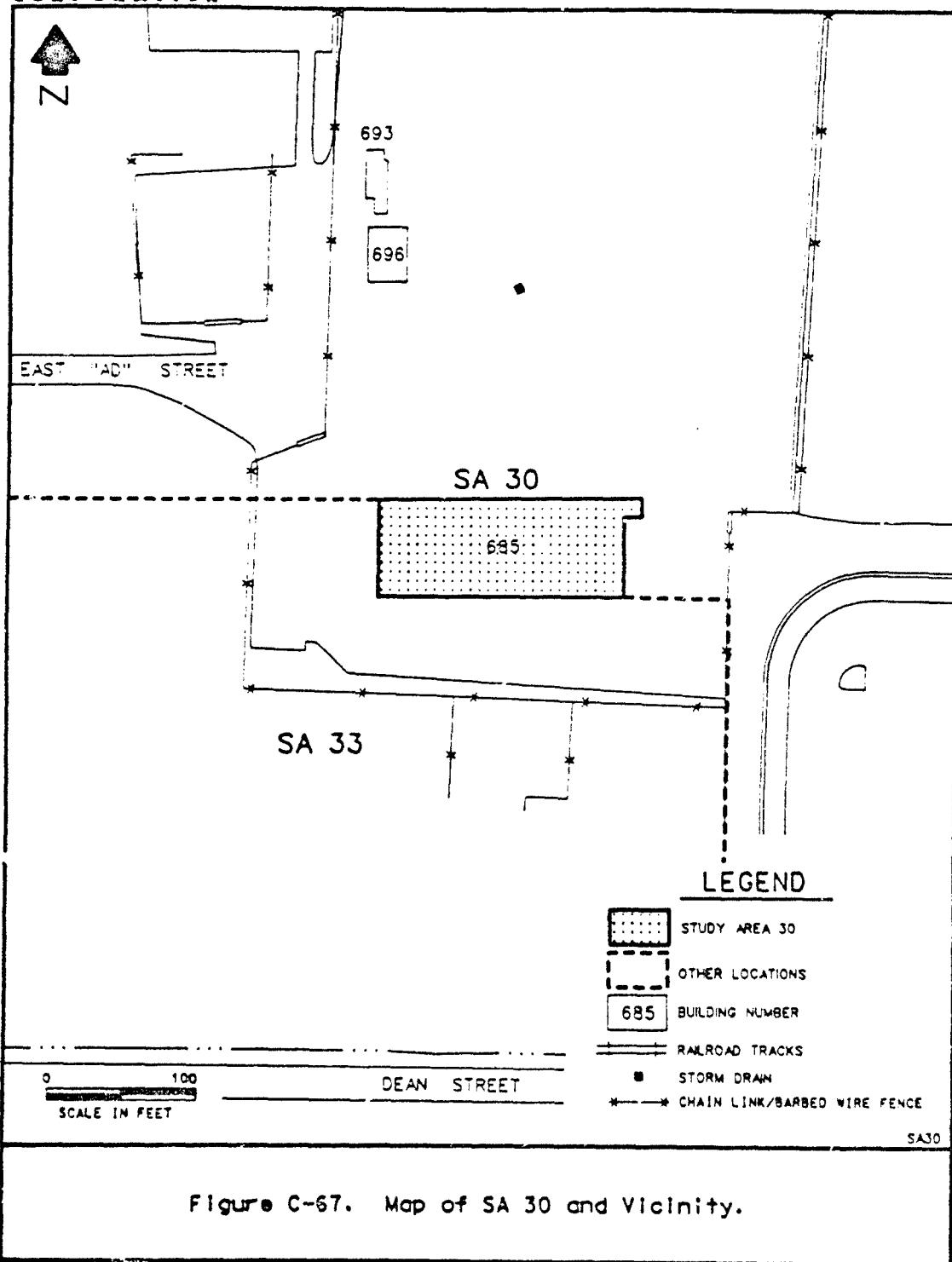
Types of materials handled:

Fuels and oils
Paints
Semivolatile organic compounds
Solvents
Volatile organic compounds

Specific chemicals handled:

1,1,1-trichloroethane	acetoxysilane
butylated hydroxytoluene	cyclohexanone
diethyl ether	ethylene
ethylene glycol	ethylene glycol monoethyl ether
isopropyl alcohol	polyalkylene glycol
polyester resin	silicon
sodium nitrite	stoddard solvent
toluene	trichlorotrifluoroethane

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Disposal methods:

Cleaning and disposal of solvents and oils was done on washrack located approximately 500 feet north of Building 685 (Study Area 3).

B. Activity/Area: BUILDING 685

Description:

Personnel within Building 685, maintain paving, construct storm drains, build concrete and asphalt sidewalks, and install chain link fences and street signs. These operations occur outside of Building 685, throughout McClellan AFB. No waste materials are stored on site and no underground storage tanks are located at SA 30.

Period of operation: 1974 to Present

Types of materials handled:

Other materials

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Disposal and cleaning of equipment was done on washrack located north of Building 685 (Study Area 3). There are no floor drains in Building 685. All other wastes are disposed of in dumpsters.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:

None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

No further action is required because there is no evidence that hazardous materials have been released to the environment.

INFORMATION SUMMARY SHEET FOR SA 31

DESCRIPTION

Study Area 31 is the location of the electronic installation training unit at Building 686.

GEOGRAPHIC INFORMATION

Figure C-68 shows the current features at SA 31 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,140/2,169,720

Area within boundaries = 74,738 square feet

Boundaries delineated using information from:
Location visit and Civil Engineering drawings.

CURRENT ACTIVITIES

The personnel of Building 686 provide administrative and training support for electronic installation teams. Approximately three quarters of the building is office/classroom space; the remaining space is used for project assembly and staging.

A continuous and effective barrier to entry exists at the location. Radian's site inspection was conducted on 31 October 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: WAREHOUSE STORAGE/EQUIPMENT ASSEMBLY

Description:

The storage areas are used mainly for storing equipment. The equipment assembly rooms are used to assemble, repair, and mobilize equipment. The only hazardous materials used is a very small amount of paint and cleaners.

Period of operation: 1987 to Present

Types of materials handled:

Paints
Solvents

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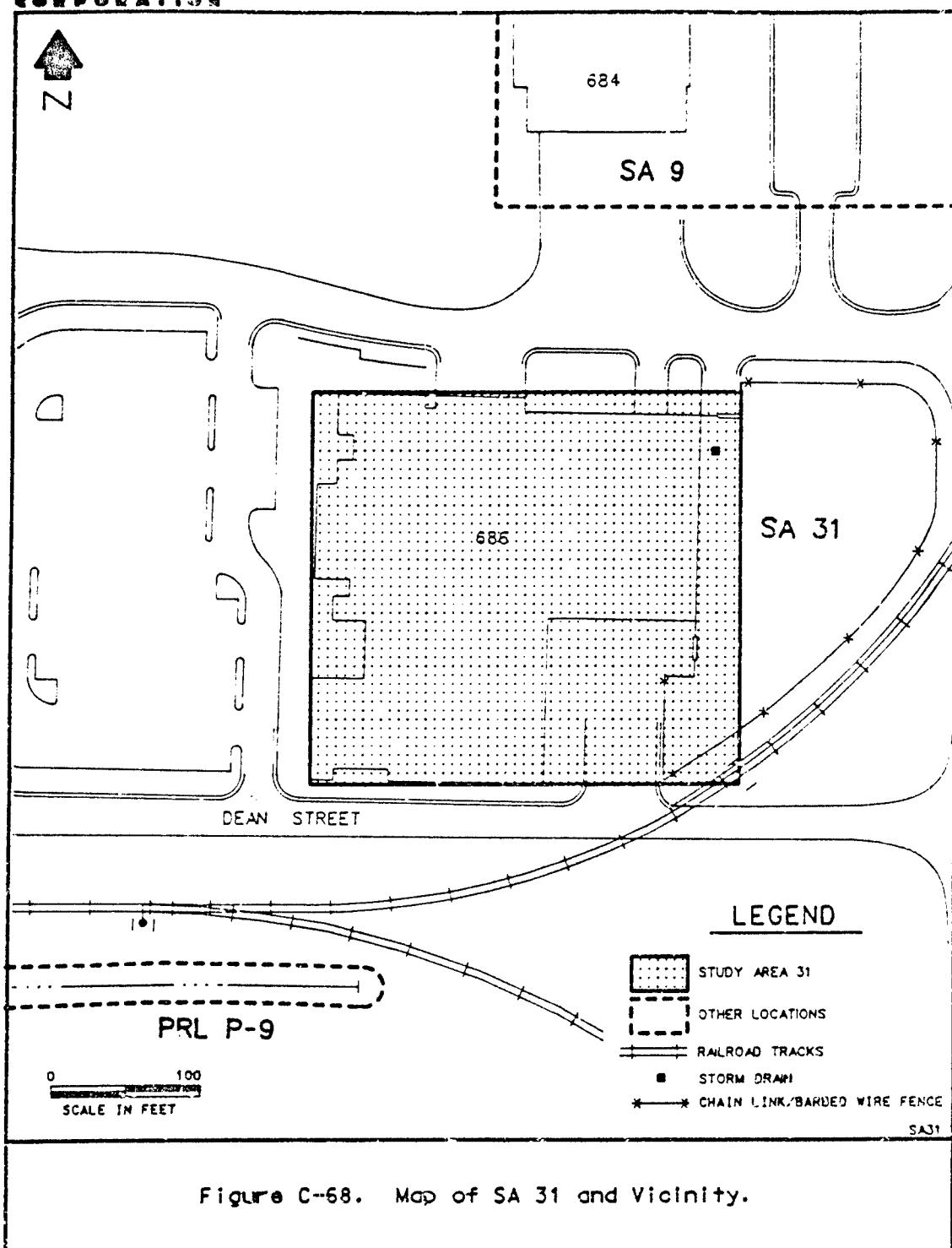


Figure C-68. Map of SA 31 and Vicinity.

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Specific chemicals handled:

1,1,1-trichloroethane
2-butanone
4-methyl-2-pentanone
acetone
butyl acetate
butyl cellosolve
dioctylphthalate
ethyl alcohol
ethylene glycol
ethylene glycol monobutyl ether
ethylene glycol monoethyl ether
isobutane
isobutyl acetate
isobutyl alcohol
isopropyl alcohol
methanol
methylene chloride
n-butyl alcohol
titanium oxide
toluene
trichlorotrifluoroethane
xylene

Disposal methods:

No hazardous wastes are generated.

B. Activity/Area: WASHRACK

Description:

Trucks are rinsed with water at the washrack. The only hazardous material handled is a small amount of engine degreaser and battery cleaner.

Period of operation: 1987 to Present

Types of materials handled:

Solvents

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Wastewater from the washrack is collected in the washrack drain. It is not clear from the Civil Engineering drawings whether this drain discharges to the IWL or not.



PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Before SA 31 can be recommended for no further action, the drain in the center of the washrack will be investigated to determine if it is connected to the IWL; if it is, then further investigation is recommended.

INFORMATION SUMMARY SHEET FOR SA 32

DESCRIPTION

Study Area 32 is the location of a reported ditch northeast of Building 650, later determined to be part of Magpie Creek.

GEOGRAPHIC INFORMATION

Figure C-69 shows the current features at SA 32 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 358,860/2,171,000

Area within boundaries = 891,993 square feet

Boundaries delineated using information from:

Analytical data.

A soil sample was collected at a sampling location identified as a "drainage ditch northeast of B/650." However, a map was not included, so the exact location of the ditch is unknown. The aerial photograph review and the location visit failed to confirm the location of the ditch. Subsequent information obtained from McClellan AFB EMR personnel confirmed the location of the ditch to be part of Magpie Creek.

CURRENT ACTIVITIES

The location was described as a drainage ditch northeast of Building 650.

The location is in a topographic depression. Radian's site inspection was conducted on 12 December 1989.

Since the date of Radian's initial site visit, additional information obtained indicates that the Study Area is actually northeast of Building 651 and has been determined to be part of Magpie Creek.

HISTORICAL ACTIVITIES

A. Activity/Area: REPORTED DITCH

Description:

Soil contamination was found in analytical results for a sample location identified as "Ditch NE of Building 650." A large area northeast of Building 650 was reviewed and no evidence of a ditch was found. Later information indicates that the area sampled was a portion of Magpie Creek.

Period of operation: Unknown

Types of materials handled:

Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.

RAILMAN
CORPORATION

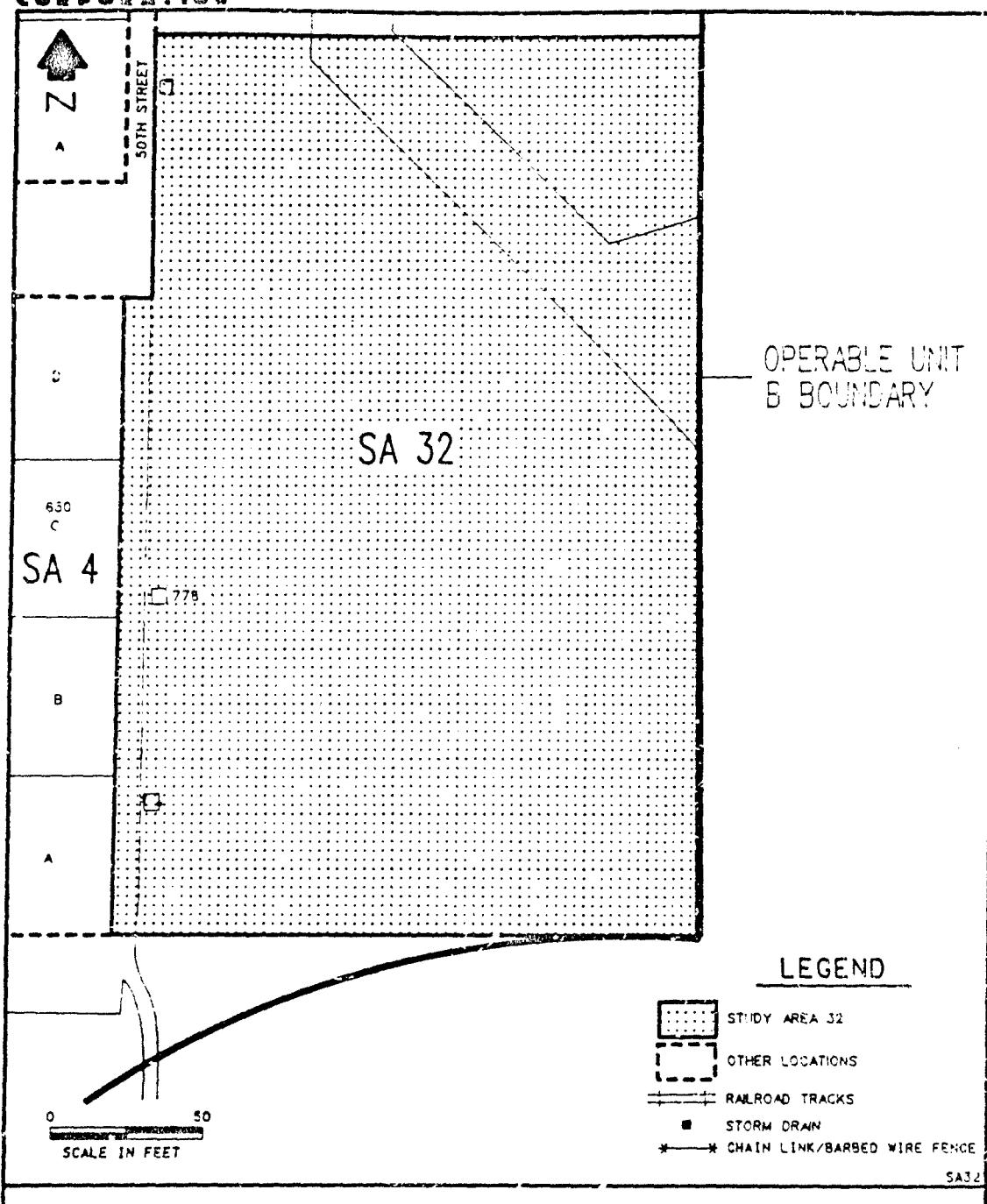


Figure C-69. Map of SA 32 and Vicinity.

PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled ~ 5 (Exact boring locations are not known)

Odors or visual evidence of contamination noted:
None.

No soil gas readings were taken.

Number of soil samples analyzed for:

Volatile organic compounds = 5
Semivolatile organic compounds/pesticides/polychlorinated biphenyls = 5
Metals = 5
Other compounds = 0

Soil samples were collected and organic compounds were detected in the analyzed soil samples from the area thought to be SA 32. However, additional information obtained indicates that the samples were actually collected in a portion of Magpie Creek (part of OU C).

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

Based on additional information obtained from a former employee of Environmental Management at McClellan AFB, the drainage ditch where soil samples were collected is not northeast of Building 650, but is located northeast of Building 651, which is Magpie Creek and is located along the Operable Unit C and B boundary. Magpie Creek will be studied as part of the OU C investigation. Because the reported drainage ditch where samples were collected is not located within the original SA 32 boundaries, no further action is recommended for SA 32.

INFORMATION SUMMARY SHEET FOR SA 33

DESCRIPTION

Study Area 33 is the location of an open storage lot south of Building 685.

GEOGRAPHIC INFORMATION

Figure C-70 shows the current features at SA 33 and vicinity.

Approximate State Plane Zone 2 coordinates (N/E) = 359,190/2,169,030

Area within boundaries = 199.555 square feet

Boundaries delineated using information from:
Location visit, aerial photographs, Environmental Management files, and interviews.

CURRENT ACTIVITIES

Graveled lot west of Building 685 used by subcontractors and the base for temporary storage, work, and office areas.

The location is in a topographic depression. Radian's site inspection was conducted on 18 December 1989.

HISTORICAL ACTIVITIES

A. Activity/Area: STORAGE LOT

Description:

Information from one interview indicated that transformers were reportedly stored in the lot south of Building 685. Aerial photographs show objects being stored; however, the scale of the photographs prohibits identification of the objects; storage activities were intermittent between 1950 and 1980. Although the lot has been used for storage since the 1950s, no confirmational evidence has been found that hazardous material have been stored within the study area.

Period of operation: 1950 to 1980

Types of materials handled:

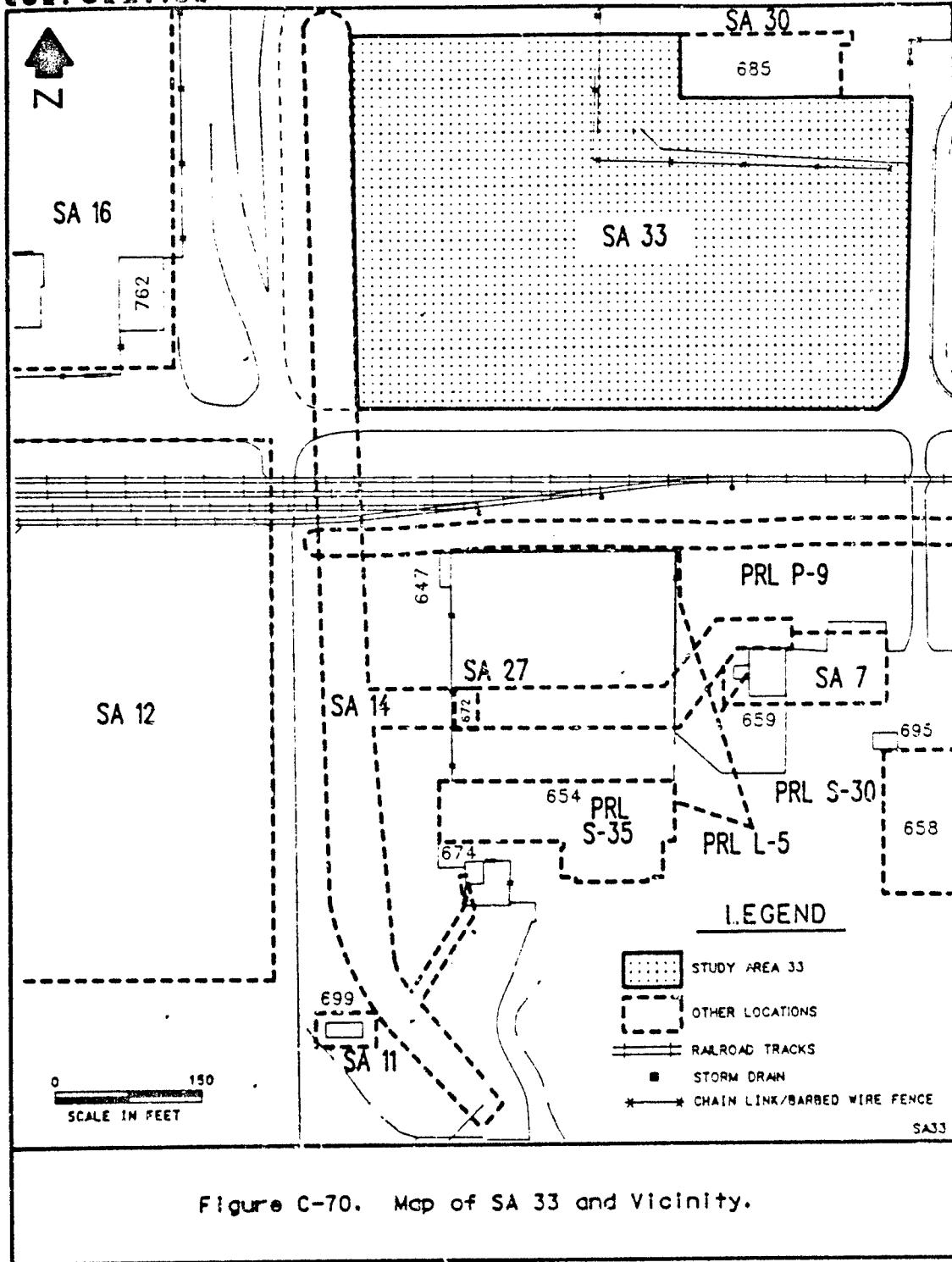
Unknown

Specific chemicals handled:

No specific chemicals have been identified.

Disposal methods:

Unknown.





PREVIOUS FIELD INVESTIGATIONS

Number of borings drilled = 0

Odors or visual evidence of contamination noted:
None

No soil gas readings were taken.

No soil samples were collected.

REMEDIAL ACTIONS

No remedial actions are known to have occurred.

RECOMMENDATIONS

No further action is required because there is no evidence that hazardous materials have been released to the environment.



APPENDIX D

Personnel Interviews by Location



PERSONNEL INTERVIEWS BY LOCATION

Personnel	Title/Position
Site 23 Vince Juarez	General Foreman - DSFSBB
PRL 29 Dick Jeffrey Bud Hoda	Chief Engineer - MAD EMR
Site 30 Don Paisley Zane Martin	Defense Logistics Service Chief--Special Projects Branch, Bioenvironmental Services
Richard Zipp Mike Jones George McAlister	Design Engineering Department Electronic Foreman - MAI Radiation Protection Officer, Technical Operations Division
Site 31 No Interviews	
PRL 35 No Interviews	
Site 36 Joe Cruz Tom Burns	Plating Shop Supervisor
Site 47 Joe Cruz Lee Dupray Dick Jeffrey	Plating Shop Supervisor COMM/ELECT RPR Section Chief Engineer - MAD
Site 48 Jim Costa Joe Cruz George Gregory	Civil Engineering, Wastewater Unit Plating Shop Supervisor Plat: Foreman, Civil Engineering, Wastewater Unit
PRL B-1 Stella Hart	Chief of Property Disposal, DRMO
PRL B-9 No Interviews	
PRL L-5 Dick Jeffrey Gary Mason Mark Garcia	Chief Engineer - MAD BN654 Supervisor - MADS Environmental Management - IWL Project Officer
PRL L-6 Don Paisley	Defense Logistics Services
PRL P-2 No Interviews	

Personnel	Title/Position
PRL P-9	
George Gregory	Plant Foreman, Civil Engineering Wastewater Unit
Jim Costa	Civil Engineering, Wastewater Unit
Joe Cruz	Plating Shop Supervisor
PRL S-5	
George Gregory	Plant Foreman, Civil Engineering Wastewater Unit
PRL S-12	
Vince Juarez	General Foreman - DSFSBB
Wayne Lee	Foreman, Building 624D
Bonnie Herrick	DEEC, Civil Engineering
PRL S-13	
Stella Hart	Chief of Property Disposal, DRMO
Albert Brown	Environmental Coordinator, Safety Office
Pat Yettner	Material Sorting Classifier, DRMO
James Wishart	Supervisor Environmental Protection Specialist, DRMO
PRL S-28	
No Interviews	
PRL S-29	
Jim Garvine	Supervisor, Electronics Division
Bill Gile	Engineering Technician, MAN, MAS, MAW
Lee Dupray	COMM/ELECT RPR Section
Dianne Yamasaki	Chemical Engineer
Steve Grady	Manager - Tubing Shop, Building 362B
Joe Umeda	Mechanical Engineer, Maintenance Division
Dean Sperling	MAB Safety Coordinator, MABER
Mike Jones	Electronics Foreman, MAI
Vince Juarez	General Foreman, DSFSBB
Don Kitrell	1st Line Supervisor, Mechanical Support Unit
PRL S-30	
Dean Sperling	MAB Safety Coordinator, MABER
Harlan Etix	BN658 Washrack employee
Joe Cruz	Plating Supervisor
William Buchanon	Equipment Cleaner Foreman
Zane Martin	Chief-Special Projects Branch Bioenvironmental Services
Cliff Boltz	Chief Engineer, MAD
Joe Gonzales	Sandblast Foreman
Dick Jeffrey	Chief Engineer - MAD
Richard Smith	Section Head, MANPAD
Howard Blankunsec	Sheetmetal Supervisor, MANPAD
Jim Garvine	Supervisor, Electronics Division

Personnel	Title/Position
PRL S-33	
Nino Tatayor	BN786A Manager, DSSO
Mike Kashuba	Director of Federal Managers Association
Vince Juarez	General Foreman - DSFSEB
Albert Brown	Environmental Coordinator, Safety Office
Gary Thompson	Manager, Storage Building, Chief -- Buildings 650, 651, 623, 624, 781, 783, 786, and Lots 1, 10, 17, 5
PRL S-34	
Charles Allenback	Defense Logistics Service, Safety Coordinator, MAI
Bill Gile	Engineering Technician, MAN, MAS, MAW
Lee Dupray	COMM/ELECT RPR Section
Joe Cruz	Plating Shop Supervisor
PRL S-35	
Zane Martin	Chief - Special Projects Branch Bioenvironmental Services
	Mechanical Engineer, MACI
Lyle Zytler	Sandblast Foreman
Joe Gonzales	Supervisor, Electronics Division
Jim Gervine	Plating Shop Supervisor
Joe Cruz	Mechanical Engineering Technician, MADE
Don Martin	BN654 Supervisor
Gary Mason	
PRL S-41	
Paul Whiting	Work Leader, Mat K - MABPGE
Tom Cronan	Work Leader, Mat K - MABPGE
PRL T-8	
Paul Whiting	Work Leader, Mat K - MABPGE
Cliff Boltz	Chief Engineer
Chris Hamilton	Environmental Management
PRL T-45	
Chris Hamilton	Environmental Management
Mark Malonowski	Environmental Management
Dick Jeffrey	Chief Engineer - MAD
Paul Whiting	Work Leader, Mat K - MABPGE
Tom Cronan	Work Leader, Mat K - MABPGE
PRL T-46	
Chris Hamilton	Environmental Management
Dick Jeffrey	Chief Engineer - MAD
Whiting	Work Leader, Mat K - MABPGE
Tom Cronan	Work Leader, Mat K - MABPGE
Don Martin	Mechanical Engineering

Personnel	Title/Position
PRL T-48	
Chris Hamilton	Environmental Management
Joe Megia	BN762
Dou Martin	Mechanical Engineering
Dick Jeffrey	Chief Engineer - MAD
Paul Whiting	Work Leader, Mat K - MABPGE
Tom Cronan	Work Leader, Mat K - MABPGE
PRL T-60	
Chris Hamilton	Environmental Management
Bonnie Herrick	DEEC, Civil Engineering
SA-1	
Mike Jones	Electronic Foreman - MRI
George McAlister	Radiation Protection Officer, Technical Operations Division
Zane Martin	Chief - Special Projects Branch Bioenvironmental Services
Randy Birge	Tech. Sgt. - TOD Maintenance Section
SA-2	
Kim Emeric	Environmental Management
Mike Jones	Electronics Foreman, MAI
Richard Zipp	Design Engineering Department - workers
George McAlister	Radiation Protection Officer, Techops
Don Paisley	Defense Logistics Service, Radiation Chemist
Bob Osbourn	Defense Logistics Service, Radiation Chemist
Zane Martin	Chief, Special Projects Branch, Bioenvironmental Services
Robert Evans	Environmental Management
SA-3	
George Gregory	Plant Foreman, Civil Engineering, Wastewater Unit
Bonnie Herrick	DEEC, Civil Engineering
Doug McKenzie	Environmental Management
SA-4	
Robert Evans	Environmental Management
Barbara Marando	Material Processor - DS
George Houseman	Carpenter, pain Sections
Bobby Ruff	Truck Driver - DS
Gary Thompson	Manager, Storage Building, Chief - Buildings 650, 651, 623, 624, 781, 783, 786, and Lots 1, 10, 17, 5
Zane Martin	Chief - Special Projects Branch, Bioenvironmental Services
Vince Juarez	General Foreman - DSFSBB
SA-5	
No Interviews	
SA-6	
Ralph McCoy	DSSP - Petroleum Section

Personnel	Title/Position
SA-7 Gary Kamai Bill Gile Mel Plummer Charles Allenbach Dick Jeffrey	MAWV Engineering Technician, MAN, MAS, MAW Safety/Environmental Coordinators - MAI Safety/Environmental Coordinators - MAI Chief Engineer - MAD
SA-8 No Interviews	
SA-9 Larry Button Mr. Haskins	Environmental Management - Soil Program Manager Shift Supervisor - BN684
SA-10 Jerry Renville Sgt. Drenski Jody Singerland	Entomology Department BN688 Manager Environmental Management
SA-11 No Interviews	
SA-12 Stella Hart Jim Wishart Al Garner Allan McPhee Milt Stromsvick Larry Button Vince Juarez	Chief of Property Disposal, DRMO Supervisor Environmental Protection Specialist, DRMO DRMO Department Defense Surplus Manager of Materials Division Environmental Management - Soil Program Manager General Foreman, DFSB&B
SA-13 Dick Jeffrey	Chief Engineer - MAD
SA-14 No Interviews	Interviews were apparently performed but no documents are present in file.
SA-15 Allan McPhee Stella Hart Jim Wishart Al Garner Gary Thompson David Mendez Pat Yettner	Defense Surplus Chief of Property Disposal, DRMO Supervisor Environmental Protection Specialist, DRMO DRMO Department Manager, Storage Building, Chief - Buildings 650, 651, 623, 624, 781, 783, 786, and Lots 1, 10, 17, 5 Storage Supervisor - DFSF Material Sorting Classifier, DRMO
SA-16 Paul Whiting Tom Cronan Gary Kamai Don Dixon	Work Leader, Mat K - MABPGE Work Leader, Mat K - MABPGE MAQV - Department Foreman - Mat K



Personnel	Title/Position
SA-17 No Interviews	
SA-18 No Interviews	
SA-19 No Interviews	
SA-20 George McAlister	Radiation Protection Officer, Technical Operations Division
SA-21 Ron VanSant Mc Plummer Charles Allenbach	Equipment Mechanic - MA Defense Logistics Service, Safety Coordinator, MAI Defense Logistics Service, Safety Coordinator, MAI
SA-22 R. Leonard Scruggs Zane Martin Bruce Morehead	Building Manager, BN618 and 620 Chief - Special Projects Branch, Bioenvironmental Services Environmental Coordinator - Material Management
SA-23 Bob Booch R. Leonard Scruggs Ray Astrue Zane Martin	Technician - VNSIC/LRE Sections Building Manager, BN618 and 620 Electronics Engineer, BN620 Chief - Special Projects Branch, Bioenvironmental Services
SA-24 Bobby Ruff George McAlister David Mendez Gary Thompson Zane Martin Chuck + through Jim Garvin Albert Brown	Truck Driver - DS Radiation Protection Officer, Technical Operations Division BN651 - Supervisor, DFS Manager, Storage Building, Chief - Buildings 650, 651, 623, 624, 781, 783, 786, and Lots 1, 10, 17, 5 Chief - Special Projects Branch, Bioenvironmental Services Electrical Equipment Specialist, BN250 Supervisor, Electronics Division Environmental Coordinator, Safety Office
SA-25 Steve Bochman	McClellan AFB Fire Department Station 1 - Chief
SA-26 Jim McMillan Roger Green Gary Kazai	Supervisor - Random Repair Unit, MAI Mechanic - Random Repair Unit, MAI MAQV - Department Directorate of Maintenance



Personnel	Title/Position
SA-27 Gary Kamai Gary Mason	MAQV - Department Building 672 Manager - MADS
SA-28 Kathy Dye Gary Kamai	BN677 - Quality Assurance Technician MAQV - Department
SA-29 Gary Kamai Kathy Dye Dick Jeffrey	MAQZ - Department BN677 - Quality Assurance Technician Chief Engineer - MAD
SA-30 David Rigoski	Pavement/Construction Foreman, DEMGP-DEM
SA-31 Terry Sheffler	Logistics Branch Chief
SA-32 Robert Evans	Environmental Management
SA-33 Doug McKenzie	Environmental Management

RADIANT
CORPORATION

APPENDIX E

Regulatory Agency Comments and Responses to Comments

DEPARTMENT OF HEALTH SERVICES
TOXIC SUBSTANCES CONTROL PROGRAM
REGION 1
10151 CROYDON WAY
SACRAMENTO, CA 95827-2106
(316) 855-7700



June 1, 1990

Mr. Mario E. Ierardi
Project Manager
SM-ALC/EM
McClellan Air Force Base, CA 95652-5000

Dear Mr. Ierardi:

The Department of Health Services (Department) has received the "McClellan Air Force Base (McAFB) Operable Unit B Preliminary Assessment Summary Report - Draft Copy" (Summary Report) dated 6 April 1990. The subject report was submitted to the Department for review on 19 April 1990. Please find our comments concerning the Summary Report contained in the enclosed memorandum. These comments should be considered prior to determining the status of Operable Unit B (OU-B) Sites proposed for No Further Action (NFA), and when developing strategies for future OU-B remedial investigations.

The primary focus of the Department's review of the Summary Report concerns those sites where a NFA recommendation has been proposed. The NFA recommendation represents a decision point in the CERCLA cleanup process where sites which are determined free of contamination or poses no risk may exit the remedial response program. Since NFA candidate sites may potentially be eliminated from further cleanup consideration, the Department considers its review and comment on such recommendations to be of utmost importance.

If you have any questions regarding this letter, please contact Mr. Peter J. Wood of my staff at (916) 855-7872.

Sincerely,

Anthony J. Landis
Chief, Site Mitigation Unit
Region 1

Enclosure

cc: See next page.

JUN 05 REC'D

Mr. Mario E. Ierardi
Page 2
June 1, 1990

Mr. Lewis Mitani
Remedial Project Manager
McClellan Air Force Base (T-4-6)
U.S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, CA 94105

Mr. Alex MacDonald
Regional Water Quality Control Board
3443 Routier Road
Sacramento, CA 95827

Memorandum

To

Anthony J. Landis, P.E.
Chief, Site Mitigation Unit

Date: June 1, 1990

Via: Donn L. Diebert, P.E.
Senior Waste Management Engineer

From

Toxic Substances Control Program
10151 Croydon Way
(916) 855-7872

Subject:

MCCLELLAN AFB OPERABLE UNIT B PRELIMINARY ASSESSMENT SUMMARY REPORT

The purpose of this memorandum is to present the Department of Health Services (Department) review of the "McClellan AFB Operable Unit B Preliminary Assessment Summary Report - Draft Copy" (Summary Report) dated 6 April 1990. Please note that the format of this review initially presents general comments followed by comments which are primary Department concerns. The final comment section presents the Department's secondary concerns/suggestions.

I. GENERAL COMMENTS

The Department considers it important to examine all sites both individually and also with respect to their geographic proximity with other sites. The Summary Report justifies a No Further Action (NFA) recommendation for several Potential Release Locations (PRL) and Study Areas (SA) based on a lack of evidence supporting contamination by hazardous substances/wastes handled at those sites. However, there appears to be no consideration given to the proximity of these sites relative to other sites located nearby. A NFA recommendation must also consider the potential for cross contamination by nearby sites before the Department can consider the site for withdrawal from the Base's remedial response program.

II. PRIMARY CONCERNS

The focus of this section concerns those PRLs and SAs which have been recommended for NFA. The Department will only address those sites where the proposed NFA recommendation is in dispute.

1. PRL B-9. The Department considers the proximity of this site to PRL 29 an important issue which was not addressed in the subject Preliminary Assessment (PA). We recommend including the western half of PRL B-9 as part of the continuing remedial investigation at PRL 29.

Anthony J. Landis
Page 2
June 1, 1990

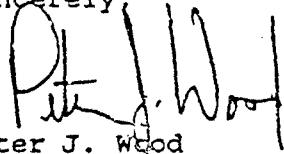
2. PRL S-12. The Department cannot support a NFA recommendation for this site due to the; 1) potential for both PCB and TCE contamination in Building 624C, and 2) PCB contamination in Building 624D. We recommend carrying this site as a PRL until samples of the concrete flooring are collected to verify the presence or absence of contamination.
3. PRL S-41. The Department cannot approve a NFA recommendation for the subject site due to its proximity to SA 16. The Department recommends including this site as part of the future remedial investigation at SA 16.
4. SA 21. The subject PA does not discuss the potential for soil contamination on the west side of Building 603, where the Industrial Waste Line (PRL L-5) conveys wastewater from the underground fuel/water separator to the Industrial Waste Treatment Plant #1. In addition, this PA also fails to address whether or not integrity testing has been conducted on either the fuel/water separator or underground waste fuel tank. These issues must be resolved before the Department can consider a NFA recommendation for this site.
5. SA 29. The subject PA fails to address the integrity of the underground storage tank located at the site. This tank is used to store waste fuels and oils generated at SA 29. The Department cannot support a NFA recommendation until this issue is resolved.
6. SA 30. The subject PA cites evidence of a washrack located just north of the site where the disposal of solvents and oils from SA 30 was purported to have occurred. However, no other information concerning the washrack is offered. The Department requests further information regarding the location of the washrack and waste disposal procedures associated with its operation. The Department cannot support a NFA recommendation for this site until the requested information is provided.
7. SA 32. The existence of contamination at this site has been verified by a previous sampling event. The Department recommends conducting further investigations to determine the location of the ditch in question. The Department cannot support a NFA recommendation for this site based on the information provided.

Anthony J. Landis
Page 3
June 1, 1990

III. SECONDARY CONCERNS/SUGGESTIONS

1. The Department supports the concept of grouping proximate sites together, when appropriate, for the purpose of conducting focused remedial investigations. We suggest considering the following sites for grouping based on both their proximity to one another, and similarity of materials handled and/or disposed:
 - o Sites 36, 47, 48 and aspects of PRL L-5
[Note: The Department proposes expediting this focused remedial investigation based on its relationship to the Area B Expedited Response Action.]
 - o Site 30, SA2 and aspects of PRL L-6
 - o PRL S-41, SA 16, PRL T-8, PRL T-48 and PRL-46
2. The Department suggests the use of radioactivity screening devices for sites where radionucleides were handled or disposed. The following sites should be considered for radioactivity screening as part of future remedial investigations:
 - o Site 30
 - o PRL L-6
 - o SA 2
3. The Department supports analytical testing for dioxins/furans at all sites where incineration has occurred, or where incineration wastes were stored or disposed. The Department suggests testing the following sites for dioxins:
 - o Site 23
 - o PRL 29
 - o Site 31
 - o SA 3

Sincerely,


Peter J. Wood
Associate Hazardous Materials
Specialist

STATE OF CALIFORNIA

DO 8

140

GEORGE DEUKMEJIAN, Governor



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
CENTRAL VALLEY REGION
ROUTIER ROAD
SACRAMENTO, CA 95827-3098

19 April 1990

RECEIVED
JUN 21 1990
AAS:blm
Ans:blm

Colonel Keith G. Findley, USAF
Director, Environmental Management
SM-ALC/EMI
Building #250-HH
McClellan Air Force Base, CA 95652-5320

**OPERABLE UNIT B PRELIMINARY ASSESSMENT SUMMARY REPORT, MC CLELLAN AIR FORCE
BASE**

Thank you for the submittal of the subject report. Board staff has reviewed the report and comments are contained in the enclosed memorandum. These comments should be considered when developing the work plan for additional site investigation in Operable Unit B.

As noted in the memorandum, PRL S-13 is of particular concern due to the potential for releases of contaminants to surface waters from this active hazardous waste storage facility. Board staff requests the submittal of the management practices for spill containment and storm water management at PRL S-13 to determine if they are adequate or if modifications need to be made to protect water quality. It is understood that a new hazardous waste storage facility will be constructed in the near future to replace this site and that the site will be further investigated under the Operable Unit B site investigations.

Please submit the requested information to our office by 24 May 1990.

If you have any questions regarding this matter, please call me at (916) 361-5626.

Alexander Macdonald
ALEXANDER MACDONALD

Area Engineer

AMM

cc: Mr. Lewis Mitani, U.S. Environmental Protection Agency, San Francisco
Mr. Peter Wood, Dept. of Health Services, Sacramento

APR 20 REC'D

MEMORANDUM

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - CENTRAL VALLEY REGION

3443 Routier Road, Suite A
Sacramento, CA 95827-3098

Phone: (916) 361-5600
ATSS Phone: 8-495-5600

TO: Wayne Pierson
Chief, Central Regulatory Unit

FROM: Alexander MacDonald
Area Engineer

DATE: 19 April 1990

SIGNATURE: 

SUBJECT: OPERABLE UNIT B PRELIMINARY ASSESSMENT SUMMARY REPORT, MC CLELLAN AIR FORCE BASE

We received the subject three volume report on 11 April 1990. The report presents preliminary assessments of potential release locations in the Area B Operable Unit. These assessments investigate the potential for releases to the environment, given the current knowledge of the site, from each of the sites. Recommendations for additional investigation or no further action are made. Board staff has reviewed the report and presents the following comments:

1. Site 23, page 5-5, paragraph 2. It is stated that two of the VOCs detected in the soil were also detected in an on-site monitor well and that migration of contaminants to ground water from Site 23 has occurred. The source of ground water contamination may not be Site 23. Ground water contamination in the upgradient direction is known to exist. Soil analyses previously performed on samples from the site may not be indicative of the contamination at the site and additional soil sampling needs to be performed before a conclusion on the source of the ground water contamination can be made.
2. Site 36, pages 7-1 and 7-2, last and first paragraphs. Additional work proposals call for at least one soil boring to be drilled and sampled at any location where near surface samples indicated the presence of contaminants and conversion of the boring into a ground water monitor well. Does this recommendation mean that a ground water monitor well will be installed at every location that shows shallow soil contamination? Ground water monitor well locations should be identified based on the need to evaluate the ground water in the downgradient direction from potential source(s). The need for additional wells should also consider the interim ground water extraction system near Building 666. Furthermore, is a deep boring warranted at each location where shallow contamination is found?
3. Site 47, page 7-1, bullet 3. Installation of an on-site ground water monitor well may not be necessary. Additional wells have been installed to evaluate the ground water contamination plume in the Building 666 area. Monitor well location and needs in this area should be evaluated on the basis of plume definition and extraction system verification.
4. Site 48, page 4-11, paragraph 1. It is stated that the historic ground water movement is to the south/southwest. However, when BW-18 was shutdown for an extended period of time in the early 1980's, and BW-13 was pumped more during that time, the ground water flow direction in the vicinity of Site 48 may have been more south/southeast.

5. PRL S-13, page 3-9, paragraph 2. The drainage from PRL S-13 is to a sump and surface water drainage ditch. PRL S-13 is a hazardous waste storage facility and the storm water drainage system and spill containment system are not adequate. The potential for contaminated storm water runoff or the release of spilled wastes to surface water drainage courses appears to be significant. The operation and maintenance of the systems should be investigated. Of particular concern is the release of waters from the sums to the drainage ditch. Is the sump and drainage system normally valved closed for spill containment?
6. PRL S-13, page 6-1, recommendations. Sampling of storm water runoff from the site should also be performed.
7. PRL S-30, page 3-6, Figure 3-3. This figure shows one single line connecting to the industrial wastewater line. Figure 3-2 shows parallel lines on either side of Building 658 connecting to the industrial wastewater line. This discrepancy should be corrected.
8. PRL T-8, page 5-1, paragraph 1. Are the three underground storage tanks scheduled for replacement/upgrade to allow conformance with underground storage tank regulations?
9. PRL T-45, page 3-1, Figure 3-2. This figure shows the site on the north side of Magpie Creek while Figure 3-3 shows the site on the south side of the creek.
10. PRL T-48, page 6-1, paragraph 4. It is proposed to replace the underground storage tanks to meet the new underground storage tank regulations. Why are these tanks to be replaced and not those at PRL T-8?
11. PRL T-60, page 7-1, paragraph 2. It proposed to screen the soil gas at the site for volatile organics. Given that the contaminant of concern is heavy bunker fuels, it is unlikely that the soil gas will provide useful data. The bunker fuels will not migrate any significant distance, are not very volatile, and usually are easily distinguished in the soil horizon.

In general, staff concurs with the recommendations for additional investigation and at designated sites and the list of sites slated for no further action. A work plan to perform the additional investigations will be submitted for agency review and specific comments will be generated in that review.

The active site of concern for potential releases to surface waters is PRL S-13, which is a hazardous waste storage facility. The management of storm water runoff and spill containment needs to be investigated to determine the adequacy of preventing wastes from being discharged to surface waters and surface water drainage courses.

AMM



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
1235 MISSION STREET
SAN FRANCISCO, CA 94103

RECEIVED

JUN 27 1990

ABJ:blagged-MH

15 JUN 1990

Mr. Mario E. Ierardi
Project Manager
SM-ALC/EM
McClellan AFB, CA 95652-5000

Dear Mr. Ierardi:

The Environmental Protection Agency (EPA) has reviewed the McClellan Air Force Base (MAFB) Operable Unit B Preliminary Assessment Summary Report - Draft Copy (Summary Report) dated 6 April 1990 and was received by EPA on 19 April 1990. Our comments on the Summary Report are enclosed.

Before EPA can consider those sites with a finding of No Further Action (NFA) in the Summary Report, more detailed information will be required. Also, a more detailed discussion on the search methodology and decision criteria would be helpful in evaluating the sites in the summary report. An understanding of the search and evaluation process would give us uniform guidelines for accessing the information in the Summary Sheets as well as uniform decision making.

If you have any questions please contact me at (415) 774-1996.

Sincerely,

Lewis Mitani
Remedial Project Manager

enclosure

cc: Distribution List

JUN 19 REC'D

Distribution List

Mr. Peter Wood
Department of Health Services
Toxic Substances Control Division
Region 1
10151 Croydon Way
Sacramento, CA 95827-2106

Mr. Alex MacDonald
Regional Water Quality Control Board
3443 Routier Road
Sacramento, CA 95827

EPA Comments to Operable Unit B
Preliminary Assessment Summary Report

GENERAL COMMENTS

1. In examining both the soil gas and ground penetrating radar (GPR) results from the various sites investigated, it appears these methods do not always provide strong positive or negative evidence of contamination. The report should provide a discussion of how a decision concerning the significance of individual measurements will be made. The importance of this type of discussion becomes clear when the individual PAs are examined. At several sites, including PRL 35, soil gas values equaling 20 parts per million (ppm) were detected. At each of these sites, with the exception of PRL 35, this level of soil gas was taken as a significant finding indicating the possible presence of volatile organic contaminants. Soil gas results were not consistently interpreted.

Soil gas measurements are a qualitative screening tool and therefore do not perfectly predict the presence or absence of contaminants; however, it is important that the report consistently apply the results of the screening tool. To ensure screening tools are consistently applied, the report should contain section(s) describing the screening techniques, their limitations, and how the results will be interpreted. Once this information is presented the data interpretation for each site should follow the guidelines that have been established. If an exception is made, an explanation should be provided.

2. The Information Summary Sheets (Appendix C) are helpful in summarizing site information and site investigative work performed to date, especially for sites and PRLs which have already had complete preliminary assessment technical memoranda prepared (Appendix B). However, the Information Summary Sheets are the only source of information for study areas. It is therefore critical that the Information Summary Sheets contain sufficiently detailed and complete enough information to enable the reader to understand site conditions and to evaluate the adequacy of the recommendation for further work for the study areas. For many of the study areas, however, this is not the case. At some study areas the Information Summary Sheet has supported a recommendation that no further work is required. For other study areas, however, the Information Summary Sheets have proven to be incomplete to assess if further work is required. Specifically, the Information Summary Sheets should include basic information relevant to potential site contamination such as

dates of known spills, details of site history pertaining to handling of hazardous materials, locations and depths of samples, and dates and methods of analyses for contaminants.

3. At sites or PRLs where soil samples were collected and analyzed for metals, the metal concentrations are compared with California Department of Health Services Total Threshold Limit Concentrations (TTLC) and Soluble Threshold Limit concentrations (STLC) as the bases for determining if soil contamination has occurred. TTLCs and STLCs are inadequate as a means of determining if soil contamination has occurred. TTLC and STLC levels are only applicable to indicate whether a waste is classified as hazardous or non-hazardous for disposal purposes. Preferably, a statistical distribution of background concentrations should be established for similar soil types from non-contaminated areas at McClellan AFB which soil sample analyses can be compared against for the purpose of determining if a release has occurred.

SPECIFIC COMMENTS

1. Section 1.0 Introduction (page 1-1)

The objective of the Summary Report should be expanded to include sites or PRLs in which no further action is recommended.

2. Section 1.0 Introduction (page 1-2)

The report does not explain the newly defined boundaries of Operable Unit B. In this section of the document, the reader should be referred to Section 3.0, Historical and Current Activities, which defines the new boundaries. Also, a map showing the boundaries of Operable Unit B in relation to streets and buildings would be helpful in assessing the boundaries of OU B with adjacent OUs.

3. Section 2.0 Procedures (page 2-1)

More detailed discussion of the procedures and methodologies used to investigate each site or PRL during the preliminary assessment should be included in the Procedures section. A description of the site visit, file search, and personnel interviews would give the reader background information necessary in understanding the implementation of the Preliminary Assessment process. In particular, the methodology of locating personnel who had worked at sites or PRLs in the past should be explained. A discussion of the decision point in which a search for knowledgeable person is deemed complete.

For example, for Site 23, investigators identified one individual who had worked in Building 781 for one year, but who was not knowledgeable about waste disposal activities. It would be advantageous to interview personnel who are knowledgeable about waste disposal practices. If the search for knowledgeable personnel has been incomplete, additional efforts should be made, following a suitable methodology.

Discussions of site visits are incomplete. Inspection methodology of site visits should be explained. The technical memoranda simply state that a particular site was visited on a specific date, but no information is given as to what was done at the sites. If a checklist was used, the contents of the checklist should be explained. A complete description of the site visit approach is needed along with site-specific summaries.

4. Section 2.1 PA/SF Investigation (page 2-1)

The files that were reviewed to obtain information for the preliminary assessment/site files (PA/SF) investigation should be identified or explained in greater detail. Refer to Section 2.2, Records Search, which lists similar type of information in Tables 2-1 and 2-2.

5. Section 2.3 Study Area Assessment (page 2-6)

The criteria used to make the decision concerning further investigation requirements at each study area do not include the sampling results from soil gas and ground penetrating radar (GPR) investigations. At many of the sites these measurements are either the only available data or the primary data used to determine whether additional or no further studies are required. Their role as criteria should be explained.

6. Section 4.1 Operations (Waste Disposal and Treatment Facilities (page 4-5)

More background information should be supplied on treatment and waste disposal practices so that the reader has a full understanding of the Operable Unit B treatment system.

7. Appendix A, 2.4 Operations (page 2-4)

A list of references used for the completion of this section should be developed. At a minimum, the reader should be referred to the list of documents if they are presented in another section of the report.

8. Appendix A, 4.4 Community Water Sources (page 4-4)

The text does not indicate the locations of municipal or domestic wells in and around McClellan AFB. This information is necessary to develop an understanding of the potential pathways that could be affected by off-site migration of contaminants.

9. Appendix B, Site 23, 4.1.2 Analytical Results (page 4-4)

It is stated that two samples from each of the five borings were analyzed. It does not appear the depth intervals containing the greatest soil gas concentrations were consistently selected for laboratory analysis. A statement describing how soil gas data was used to select depth interval samples for further analysis should be provided.

10. Appendix B, Site 23 4.1.3 Adequacy of Soil Characterization (Page 4-8)

In the first complete paragraph, the text states the "number of samples collected is considered sufficient when an estimate of the variability of contamination can be made within a specified degree of precision." Statistical assessment of variability is an extremely difficult objective to achieve. It requires the spatial correlation of data, with a minimum of 30 data points. A more appropriate and attainable sampling goal is to obtain sufficient samples to assess the spatial distribution of contaminants. A more reasonable sampling objective should be presented in the text.

11. Appendix B, Site 23, 4.2 Soil Gas Results (page 4-9)

The last paragraph of Section 4-2 implies the soil gas results adequately describe the distribution of volatile contaminants in soil. A comparison of the soil gas results presented in Table 4-2 with the soil sample data presented in Table 4-1, however, indicates that soil gas provides both false positive and false negative indications of soil contamination. Soil gas results should be studied in more detail and an interpretation of the utility of the soil gas measurements should be prepared.

12. Appendix B, Site 23, 7.0 Conclusions and Recommendation
(page 7-1)

The recommendations are reasonable given the available data. However, it will be necessary to investigate the ground water in the site 23 area, because the presence of relatively mobile contaminants and the possibility of leaking water lines yields a situation where contaminants can easily migrate to ground water.

13. Appendix B, PRL 29, 7.0 Conclusions and Recommendations
(page 7-1)

Based on the available information concerning site usage, PCB contamination at PRL 29 is a strong possibility. The GPR survey of this site did not predict an area of soil disturbance and information from aerial photographs does not identify a disposal area. Given the possibility of contamination but the uncertainty in the location of the transformer storage area, interviews are necessary. If further interviews fail to locate the storage area, additional soil sampling may be necessary to locate the possible contamination. To determine the size of the grid required, interviews should be used to determine the number of transformers stored in the area and the dimensions of the area dedicated to transformer storage. If PCBs are identified, then analyses should be performed for dioxins.

14. Appendix B, Site 30, 3.0 Site Description (page 3-1)

Because Study Area 20 (SA-20) is located within the boundaries of Site 30, the Information Summary Sheet recommends that SA-20 be included into the investigation of Site 30. This recommendation is appropriate, therefore, the inclusion of SA-20 into Site 30 should be documented in the Site Description Section, or another appropriate Section under Site 30.

15. Appendix B, Site 30, 7.0 Conclusions and Recommendations
(page 7-1)

The recommendations presented in this section are sound. Prior to conducting further investigations, consideration should be given to performing a soil gas investigation to estimate the horizontal extent of soil contamination resulting from spillage and disposal practices. Furthermore, the text states that low level radioactive wash water was disposed of at the site. Soil samples should be sampled for radionucleides.

16. Appendix B, Site 31, 7.0 Conclusions and Recommendations
(page 7-1)

The recommendations are appropriate given the available information. Ash associated with the incinerator was stored on-site. Twenty borings were installed in the area. Several borings encountered discolored soil, but no soil samples were acquired. The original investigation should have acquired samples from the discolored areas, which are apparently accumulations of ash. Future sampling activities should use the existing information to propose additional borings which may help to define the volume of ash buried. The PA recommends analyzing ash samples for polynuclear aromatics (PNAs) and metals. It is prudent to also analyze these samples for polychlorinated dibenzofurans (PCDF) and polychlorinated quarterphenyls (PCQL) and dioxins, which may have been generated during refuse incineration as the result of incomplete combustion of chlorinated organics.

17. Appendix B, PRL 35, 7.0 Conclusions and Recommendations
(page 7-1)

PRL 35 is a former scrap metal burial pit reportedly removed in 1950 during construction of building 652. Five borings have been installed in the area, but no soil samples were collected. GPR and the soil logs failed to locate an apparent disposal area. No base personnel could be identified to interview. Since no disposal area was located and the metals disposed in this area are assumed to be relatively non-toxic, the PA recommends no further action for this site.

There is evidence presented in the PA, however, that the investigation may have missed the disposal area. On page 3-4 it is stated that the majority of Building 652 was constructed prior to 1947. The southern portion of the building was completed between 1949 and 1950. Since the scrap metal was reportedly removed in 1950, the disposal site is most likely located near the southern portion of Building 652. None of the borings installed during previous studies are near the southern portion of Building 652, and the GPR investigation does not extensively assess the southern portion of the building. It is possible that PRL 35 is located near the southern portion of building 652 rather than to the west of the center of the building. Limited further study of this site is recommended. If possible additional interviews should be conducted to determine if wastes were actually disposed. Lacking any additional qualitative information, a single boring should be installed to the west of the southern portion of Building 652. This boring should be

sampled at shallow depth and the soil should be analyzed for the presence of volatile organic compounds (VOCs), semivolatile organics and metals. The results from this boring will provide quantitative information concerning the presence or absence of contaminants.

Furthermore, the text states in paragraph one that "the soil investigation did not find any waste." Positive soil gas readings, however, were detected in cuttings from four borings. Borehole 35DAP02 indicated elevated soil gas readings of 20 ppm at 40 feet. At other sites, this level of soil gas was associated with significant (approximately 100 ug/kg) concentrations of VOCs. A soil sample from the same borehole at 20 feet is noted as having "discoloration ... in the soil".

The PA does not sufficiently address this issue. Although no known disposal of volatile organics occurred at this site, the PA must discuss mechanisms that explain the apparent indications of volatile contamination. Without an alternative explanation, it is possible to conclude the observed soil gas concentrations are related to disposal of volatile organics at this site.

In light of these inconsistencies, it is premature to exclude this PRL from further action. It is recommended that additional soil samples be collected and analyzed for VOCs and semivolatiles and metals. Additional soil samples from borings in the southern portion of the site should be collected and analyzed. Samples should also be collected in the vicinity of boring 35DAP02.

18. Appendix B, Site 36, 7.0 Conclusions and Recommendations
(page 7-1)

The recommendations presented are reasonable given the available data. However, the exact extent of any additional investigations must be presented in a sampling and analysis plan.

19. Appendix B, Site 47, 4.2.2 Analytical Results, Metals
(page 4-12)

Site 47 is the location of an electroplating shop (Building 666) where a wide range of plating-related processes were performed. Consequently, there is a strong possibility of metals contamination resulting from these operations. The PA, however, utilizes inappropriate standards to measure the level of potential contamination. TTLC and STLC levels are inappropriate as a means of determining soil contamination. TTLC and STLC levels are only applicable to indicate whether a waste is classified as hazardous or non-hazardous for disposal purposes.

Preferably, a statistical distribution of background concentrations should be established for similar soil types from non-contaminated areas at McClellan AFB against which soil sample analyses can be compared for the purpose of determining if contamination has occurred.

20. Appendix B, Site 47, 7.0 Conclusions and Recommendations
(page 7-1)

The PA has identified a significant contaminant source and is proposing to move rapidly toward investigating remedial alternatives that can address the observed contamination. This approach is justified by the available data, which are sufficient to scope remedial alternatives. It is recommended any future investigations consider the proposed remedial alternatives and collect information necessary to evaluate the performance of the proposed alternatives. Examples of the types of information that may be of interest include soil permeability (for soil gas extraction), concentrations of water constituents known to foul water treatment facilities, and aquifer properties (for pump and treat alternatives).

21. Appendix B, Site 48, 7.0 Conclusions and Recommendations
(page 7-1)

These recommendations are justified given the available data. However, the exact extent of any additional investigations must be presented in a sampling and analysis plan.

22. Appendix B, PRL B-1, 4.3.2 Potential for Migration to Surface Water (page 4-2)

The text does not indicate the nature of the localized topography. The relative slope, distance to nearest surface water and history of the asphalt covering need to be addressed. Information on the run-off from the site and the ultimate fate of run-off needs to be provided.

23. Appendix B, PRL B-1, 5.0 Conclusions and Recommendations
(page 5-1)

The text indicates PRL B-1 (as identified by McLaren Environmental Engineering, Inc.) cannot be located based on McLaren's information and aerial photographs. Because of this, Radian recommends PRL B-1 be removed from the list of PRLs. This recommendation is premature. More research is necessary to explain the discrepancy between McLaren's and Radian's findings. To resolve this issue, McLaren should be contacted to discuss interpretation of the aerial photographs. There could have been

an error in McLaren's analysis, but this error is neither confirmed nor evaluated in the report. If it appears the previous identification of the site by McLaren was incorrect, the recommendation of no further action may be justified. However, new information may lead to the identification of a potential release location at another location.

24. Appendix B, PRL B-9, 1.0 Introduction (page 1-1)

The text states "the location of PRL B-9 is shown in Figure 1-1." As the location has not been confirmed by Radian personnel, the wording of the text and the Figure should be altered to reflect that the location indicated on the map is based on McLaren's work and has not yet been confirmed.

25. Appendix B, PRL B-9, 5.0 Conclusions and Recommendations (page 5-1)

As with PRL B-1, the text indicates PRL B-9 cannot be located based on McLaren's information and aerial photographs. Because of this, Radian recommends PRL B-9 be removed from the list of PRLs. This recommendation is premature. Mora research is necessary to explain the discrepancy between McLaren's and Radian's findings. To resolve this issue, McLaren should be contacted to discuss interpretation of the aerial photographs. There may have been an error in McLaren's analysis, but this error is neither confirmed nor evaluated in the report. If it appears the previous identification of the site by McLaren was incorrect, the recommendation of no further action may be justified. However, new information may lead to the identification of a potential release location at another location.

26. Appendix B, PRL L-5, 3.1 Location Delineation (page 3-1)

The PA should indicate if PRL L-5 and PRL L-6 are physically connected. Figure 3-2 suggests the two lines are connected. The text should address the size, composition, and age of sections of the industrial waste line (IWL) that can be identified. This information will make it easier to identify and locate areas of subsurface soil most likely contaminated due to deterioration of the pipeline.

27. Appendix B, PRL L-5, Figure 3-2 (page 3-3)

Figure 3-2's legend shows PRL L-5 is indicated by a large solid line. In the figure, both PRL L-5 and PRL L-6 are shown as bold solid lines. The two line sections should be differentiated in this figure to avoid confusion. Also, flow directions and inflow and discharge points should be shown.

28. Appendix B, PRL L-5, 5.0 Conclusions and Recommendations (page 5-1)

The recommendation for further action at PRL L-5 is warranted. In addition to the placement of borings, and possibly wells to determine vertical and lateral extent of contamination, background soil borings and upgradient monitoring wells should be installed to determine background constituent concentrations and groundwater quality flowing into the site.

29. Appendix B, PRL L-6, 3.0 Location Description (page 3-1)

The text indicates PRL L-6 is located along the western boundary of Operable Unit B. The location map (Figure 3-1), however, indicates PRL L-6 is located in the central portion of the operable unit. The actual location of PRL L-6 should be identified consistently in the text and the location map.

As with PRL L-5, this preliminary assessment does not indicate the direction of flow within the pipeline. The text, as well as all diagrams and figures, should indicate the direction of flow.

30. Appendix B, PRL L-6, 3.2 Historical Activities (pages 3-1 to 3-4)

The text indicates wastes flowing through PRL L-6 come only from Buildings 628 and 652. Figure 3-2 indicates there may be many other sources. Flow direction within the pipeline should be indicated both in the text and in Figure 3-2 so that sources and discharge points are clearly identified.

31. Appendix B, PRL L-6, 5.0 Conclusions and Recommendations (page 5-1)

The recommendation for further action at PRL L-6 is warranted. In addition to the placement of borings and possibly wells to determine the vertical and horizontal extent of contamination, background soil borings and upgradient monitoring wells should be installed to establish background constituent

concentrations and ground water quality flowing into the site. In addition to analyses for VOCs, pesticides, semivolatile organics, and metals, samples should also be analyzed for radionuclides.

32. Appendix B, PRL P-2, 5.0 Conclusions and Recommendations (page 3-1)

The recommendation for further action at this location is warranted.

33. Appendix B, PRL P-9, 3.1 Location Delineation (page 3-1)

The original north-south orientation of the drainage ditch as proposed by McLaren maybe in error. There could have been two ditches. It will be necessary for Radian personnel to contact McLaren to discuss the location and orientation of the drainage ditch in question and determine if another ditch may be present in the area.

34. Appendix B, PRL P-9, 4.3.2 Potential for Migration to Surface Water (page 4-2)

The text indicates the discharge to the drainage ditch was discontinued 25 years ago and further, based on the many years of non-use the potential for contaminant migration to surface water is determined to be negligible. However, sediments within the drainage ditch may still contain metals that could migrate to surface water during periods of run-off after heavy rainfall events. Therefore, potential for release to surface water should be considered until proven otherwise.

35. Appendix B, PRL P-9, 5.0 Conclusions and Recommendations

The recommendation for further action is warranted. The discrepancy between the clarifies.

36. Appendix B, PRL S-5, 5.0 Conclusions and Recommendations

The recommendation for further action at this location is warranted.

37. Appendix B, PRL S-12, 5.0 Conclusions and Recommendations (page 5-1)

The recommendation for no further action at this site is warranted.

38. Appendix B, PRL S-13, 3.2 Historical Activities (page 3-4)

The technical memorandum refers to "French drains," but later in the document (pages 3-5 to 3-9) it mentions "trench drains." This inconsistency should be clarified.

The text indicates the French drain ran perpendicular to the eastern drainage ditch but does not state it empties into the ditch. This point should be clarified. Furthermore, the text does not indicate if wastes flowing to the drainage ditch received any treatment. In addition, the location of the eastern drainage ditch discharge is not given. This is important to gain an understanding of the potential for downgradient contamination. Also, the report should state if soil was removed when the floor of Building 709 was replaced and if so, if there were any areas of staining.

39. Appendix B, PRL S-13, 5.3.2 Potential For Migration To Surface Water (pages 5-4 to 5-5)

The text should indicate if any elevated levels of VOCs or heavy metals have been detected in Arcade Creek, Second Creek, or Magpie Creek during monthly National Pollutant Discharge Elimination System (NPDES) sampling.

40. Appendix B, PRL S-13, 5.0 Conclusions and Recommendations (page 5-1)

The recommendation of further action at this site is warranted. In addition to the recommended soil sampling beneath asphalt and adjacent to ditches and sumps, sediments in the ditches should be resampled and analyzed for VOCs, semivolatiles, and metals. The ditches should be resampled because the quality of previous laboratory results from ditch sediment samples are questionable because of apparent laboratory contamination. Samples should also be collected to establish background levels of constituents.

41. Appendix B, PRL S-28, 5.0 Conclusions and Recommendations (page 5-1)

The recommendation for further action at this location is warranted because it is likely that spills have taken place. If soil gas results indicate the need for collection of soil samples, analyses should include VOCs, semivolatiles and metals.

42. Appendix B, PRL S-29, 5.0 Conclusions and Recommendations
(page 5-1)

The recommendation for investigation and testing of the floor drains and piping is warranted.

43. Appendix B, PRL S-30, 3.2 Historical Operations
(pages 3-1 to 3-7)

The text indicates wastewater in the sump was discharged to the industrial wastewater line (IWL). The report should indicate if there was any treatment of this water prior to its discharge to the IWL, if so what type of treatment and where wastewater was discharged prior to connection of the sump with the IWL.

The report should indicate if the old floor was removed prior to the installation of the new floor and if so, if there was any indication of staining of the soil beneath the floor.

44. Appendix B, PRL S-30, 5.0 Conclusions and Recommendations
(page 5-1)

The recommendation for further action at this location is warranted.

45. Appendix B, PRL S-33, 3.2 Historical Activities (page 3-4)

The text should include a more complete description of the "industrial drain." It is necessary to know if the drain leads to the IWL or to a sump and if it is still in use.

46. Appendix B, PRL S-33, 5.0 Conclusions and Recommendations
(page 5-1)

The text states further action is dependent on the results of screening cracks in the floor with an organic vapor analyzer (OVA). While an OVA may be helpful in identifying sampling locations with the highest potential for contamination, negative results from an OVA should not be interpreted as a basis for no further action. If there are cracks in the floor, soil samples should be collected from beneath the cracks and analyzed for the presence of VOCs and semivolatiles. Soil samples should also be collected from the drain area and along underground pipes associated with the drain. In the event no contamination is found the site can be recommended for no further action.

47. Appendix B, PRL S-34, 5.0 Conclusions and Recommendations
(page 5-1)

The recommendation for further action (including soil sampling) at this location is warranted.

48. Appendix B, PRL S-35, 3.2 Historical Activities (page 3-1)

On page 3-1 the text should describe the types of operations and processes used to "test ground support equipment" in order to evaluate the potential hazards.

The text should list the constituents of PD 680.

49. Appendix B, PRL S-35, 4.3.2 Potential for Migration to Surface (page 4-3)

The text should indicate whether storm drains are lined or unlined and what the type of lining material. This is significant because unlined storm drains could lead to soil contamination.

50. Appendix B, PRL S-35, Potential Hazards (page 4-1)

No discussion of potential release to air is included. The section should be included to complete the document.

51. Appendix B, PRL S-35, 5.0 Conclusions and Recommendations
(page 5-1)

The recommendation for further action (including soil sampling) is warranted. In addition to sampling along the trench drain and piping leading to the IWL, soil samples should be collected beneath any cracks in the floor of the building.

52. Appendix B, PRL S-41, 3.2 Historical Operations (page 3-4)

The text refers to "minor spills" but does not identify what types of materials were spilled. These materials should be identified.

53. Appendix B, PRL S-41, 3.3 Current Operations (page 3-4)

Further work at PRL S-41 is contingent on the nature of the ditch (see comment 54).

54. Appendix B, PRL S-41, 5.0 Conclusions and Recommendations
(page 5-1)

The recommendation for no further action appears to be acceptable as long as the drainage ditch along Dean St. is lined. If the ditch is unlined, samples of the sediments should be collected to determine if PRL S-41 is a potential source of contamination. If samples indicate no contamination then the site can be recommended for no further action.

55. Appendix B, PRL T-8, 5.0 Conclusions and Recommendations
(page 5-1)

The recommendation for soil sampling around the underground storage tanks is warranted. Analysis of samples should include VOCs, SVOCs, and metals. If soil contamination is found, the tanks and piping should be replaced. The recommendation to add the piping located adjacent to the buildings of Mat K as a new Potential Release Location is warranted. To the extent possible, the piping associated with the fuel tanks should be investigated as part of the PRL T-8 investigation.

56. Appendix B, PRL T-45, 5.0 Conclusions and Recommendations
(page 5-1)

The recommendation for the removal of the separator and associated piping, along with sampling of soil, is warranted. Sediments in the adjacent drainage ditch should also be analyzed for VOCs, semivolatiles and metals which could have originated from the oil/water separator.

57. Appendix B, PRL T-46, 5.0 conclusions and Recommendations
(page 5-1)

The recommendation for the removal of the separator and associated piping, along with sampling of soil, is warranted.

58. Appendix B, PRL T-48, 5.0 Conclusions and Recommendations
(page 5-1)

The recommendation for the removal of the separator and associated piping, along with sampling of soil, is warranted.

59. Appendix B, PRL T-60, 5.0 Conclusions and Recommendations
(page 5-1)

Because the locations of soil samples collected at this location are not known results indicating no contamination cannot be considered to be indicative of site conditions. The tank and associated piping should be removed. Sampling of soil from below the tank should be performed to determine if the tank leakage has led to contamination of soil.

60. Appendix C, SA-1, Recommendations (page C-120)

The recommendation to collect and analyze "at least one soil sample from the area east of Building 626A where Freon was reportedly dumped" is appropriate; however, more than one soil sample should be collected and analyzed in order to confirm the presence or absence of contamination.

61. Appendix C, SA-2, Recommendations (page C-127)

The recommendation for further work including collecting and analyzing soil samples during decommissioning Building 628 is warranted.

62. Appendix C, SA-3, Recommendations (page C-130)

The recommendation for further work is warranted.

63. Appendix C, SA-4, (page C-136)

The recommendation for further work includes using photoionization detector (PID) or flame ionization detector (FID) real-time analyzers to screen the concrete foundations around the paint shop and hazardous waste staging area for VOCs. In addition, the text states "collect and analyze near-surface samples ... if warranted based on the screening results." It is appropriate to use PID or FID analyzers to screen for locations of highest concentrations, but if the results are negative, it should not be assumed there is no soil contamination. Therefore, it is still necessary to collect and analyze soil samples.

64. Appendix C, SA-5, Recommendations (page C-139)

Recommendations for further investigations are warranted.

65. Appendix C, SA-6, Recommendations (page C-142)

Recommendations to collect and analyze soil samples is appropriate.

66. Appendix C, SA-7, Recommendations (page C-147)

Recommendations for further investigations are warranted.

67. Appendix C, SA-8, Reccommendations (page C-149)

Recommendations to collect and analyze soil samples is appropriate.

68. Appendix C, SA-9, Recommendations (page C-155)

Recommendations for further investigations are warranted.

69. Appendix C, SA-10, Recommendations (page C-160)

Recommendations for further investigations are warranted.

70. Appendix C, SA-11, Recommendations (page C-163)

Recommendations for further investigations are warranted.

71. Appendix C, SA-12, Recommendations (page C-168)

Recommendations for further investigations are warranted.

72. Appendix C, SA-13, Racommendations (page C-175)

Recommendations for further investigations are warranted.

73. Appendix C, SA-14, Recommendations (page C-179)

Recommendations for further investigations are warranted.

74. Appendix C, SA-15, Recommandations (page C-182)

Recommendations for further investigations are warranted.

75. Appendix C, SA-16, Recommandations (page C-186)

Recommendations for further investigations are warranted.

76. Appendix C, SA-17, Recommendations (page C-189)
Recommendations for further investigations are warranted.

77. Appendix C, SA-18, Recommendations (page C-192)
Recommendations for further investigations are warranted.

78. Appendix C, SA-19, Recommendations (page C-195)
Recommendations for further investigations are warranted.

79. Appendix C, SA-20, Recommendations (page C-196)
Recommendations for further investigations are warranted.

80. Appendix C, SA-21, Recommendations (page C-203)

Not enough information is presented in the Information Summary Sheet to allow the determination whether further work is required or not. The follow specific information should be included in a technical memorandum or preliminary assessment report:

- Information as to whether the underground trough, fuel/water separator or fuel storage tank conform to current standards and regulations.
- When the underground trough, fuel water separator and tank were installed.
- The locations of piping, underground fuel/water separator and fuel storage tank should be added to the map.
- The aerial photographs identify "unidentified materials" located on-site from 1946 to 1974. No information is provided as to the quantity and types of materials stored on site prior to 1984. There is a data gap between 1974 and 1984. This gap should be addressed.

81. Appendix C, SA-24, Recommendations (page C-206)

The recommendation of no further action at this study area is warranted.

82. Appendix C, SA-25, Recommendations (page C-210)

Concur with recommendation.

83. Appendix C, SA-29, Recommendations (page C-230)

Study Area 29 is the location of an equipment testing and calibration shop at Building 677. As part of on-going activities the site contains four underground storage tanks. These tanks are used to store hydraulic fluid, jet fuel, and unidentified wastes. The Information Summary Sheet states no further action is required at this study area because no evidence exists that hazardous materials have been released to the environment. The recommendation for no further action maybe warranted however, additional information should be presented on the underground storage tanks before this determination can be made. The installation date and construction of each should be given as well as their history of operation. Conformance with current standards and regulations should be evaluated. A leak test for each tank should be considered.

84. Appendix C, SA-30, Recommendations (page C-233)

Study Area 30 is the location of an engine repair shop. Potential sources of contamination include the wash-rack area and underground storage tanks. The Information Summary Sheet recommends no further action because there is no evidence that hazardous waste materials have been released to the environment.

This recommendation may be premature. Not enough information is provided in the Information Summary Sheet to allow the determination as to whether further action is required or not. The following questions should be answered:

- Is the area around the Study Area, especially the wash-rack area, paved or unpaved?
- Where does the run-off from the wash-rack area drain?
- Where and how are the hazardous materials including fuels, oil, and solvents disposed of? If there are floor drains, where do the drains lead?
- Are any waste materials stored on-site? If so, where?
- Are there any underground storage tanks? If so, how old and how large are they? Have they been tested?

85. Appendix C, SA-31, Recommendations (page C-237)

SA-31 is listed in Table 5-4 for no further action, however recommendations in the Information Summary Sheet consist of determining if the drain in the center of the wash rack is connected to the IWL. This should be done prior to recommending no further action.

86. Appendix C, SA-32, Recommendations (page C-240)

Study Area 32 is the location of a reported ditch northeast of Building 650. Prior investigations had reported that organic soil contamination was detected in samples collected from a "ditch NE of Building 650." However, Radian has been unable to locate the ditch that meets this description. The Information Summary Sheet for SA-32 recommends no further action unless the location of the ditch becomes known. The information presented in the Information Summary Sheet is incomplete, particularly regarding alleged soil samples. The Information Summary Sheet does not mention why soil samples were collected and analyzed, when, by whom, or at what depths the samples were collected. Also, concentrations of detected contaminants are not reported. No potential sources of ditch contamination are mentioned. It is possible that the ditch area may have been leveled at some time, so that now the ditch is not evident. It is recommended the contractor or base personnel who collected the original samples be contacted and questioned as to the exact location of the ditch.

87. Appendix C, SA-33, Recommendations (page C-243)

Study Area 33 is the location of an open storage lot south of Building 685. The lot has been used for storage since the 1950s. An interview indicated transformers were reportedly stored in the lot south of Building 685. Visual inspection of the site indicates no signs of contamination. Because there is no evidence hazardous materials have been released to the environment, the Information Summary Sheet recommends no further action.

This recommendation may be premature. There is not sufficient information presented in the Information Summary Sheet to allow a determination as to whether further action is required or not. Transformers were stored on the site. The duration of transformer storage is not provided. Aerial photographs are not cited, but these may help to determine location, duration, and number of transformers stored on-site. If aerial photographs

indicate transformers were stored on site for a long duration, then shallow soil samples may be required. It is mentioned gravel covers the surface and there are no signs of staining. If the gravel was added recently, it could cover potential soil contamination. If possible, it should be determined when the gravel was placed on the lot.

EDITORIAL COMMENTS

1. Section 4.0, Summary of Operable Unit B Investigation

Tables in Chapter 4 are out of order, making reading confusing. Table 4-2 is on page 47, Table 4-3 is on page 4-10, and Table 4-1 is on page 4-13.

2. Appendix A, Figure 2-1 (page 2-2)

Interstate highway I-80 is listed as "Roseville Freeway." The word "Roseville" should be moved to the location of Roseville Road.

3. Appendix B, Site 23, Table 5-1 (page 5-3)

"Chlroform" should be changed to "chloroform."

4. Appendix B, Site 29, 3.0 Location Description (page 3-1)

The text states: "Potential Release Location (PRL) 29 is located west of Operable Unit (OU) B at McClellan Air Force Base (AFB) as shown in Figure 3-1." Figure 3-1 shows PRL 29 in the west-central part of OU B, not west of OU B.

5. Appendix B, PRL 35, 4.1 Soil Results (page 4-1)

Deep auger "brofile" should be deep auger "profile."

6. Appendix B, Site 48, Introduction (page 1-3)

"understan ing" should be "understanding".

SUMMARY OF COMMENTS ON RECOMMENDATIONS
FOR NO FURTHER ACTION

PRL/SA	Agree with Recommendation for No Further Action	Disagree with Recommendation for No Further Action	Comments
PRL 35		X	Elevated soil gas readings. Location of burial pit may not have been found. Additional borings warranted.
PRL B-1		X	Discrepancy between McLaren's and Radian's interpretations needs to be addressed.
PRL B-9		X	Discrepancy between McLaren's and Radian's interpretations needs to be addressed.
PRL S-12	X		
PRL S-41		X	Integrity of lining of drainage ditch along Dean Street should be investigated.
SA-21		X	More detailed information needs to be provided on the underground fuel storage tank, underground trough, and fuel/water separator.
SA-22	X		
SA-23	X		
SA-24	X		

SUMMARY OF COMMENTS ON RECOMMENDATIONS
FOR NO FURTHER ACTION (Continued)

PRL/SA	Agree with Recommendation for No Further Action	Disagree with Recommendation for No Further Action	Comments
SA-25	X		
SA-26	X		
SA-27	X		
SA-28	X		
SA-29		X	More detailed information needed on the underground storage tanks.
SA-30		X	More information needed on site conditions, and storage and disposal practices.
SA-31		X	Determine if the drain is connected to the industrial waste line (IWL).
SA-32		X	Data should be provided on prior soil sample analyses. Contact sampler to locate ditch.
SA-33		X	More information need on duration and volume of transformer storage.



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS SACRAMENTO AIR LOGISTICS CENTER (AFLC)
McCLELLAN AIR FORCE BASE, CALIFORNIA 95852-5890

4051

14 AUG 1990

REPLY TO
ATTN OF

EMR

SUBJECT Operable Unit (OU) B Preliminary Assessment Summary Report

TO SEE DISTRIBUTION

1. Responses to your comments on the subject report are enclosed for your review. The responses fulfill the Interagency Agreement (IAG) requirements for secondary documents.
2. However, as we discussed in our 9 July 1990 meeting, we will incorporate these responses and finalize the subject report. At this time, it is not feasible for us (contractually) to finalize the document. We are working on this issue, and will give you a target date for the issuance of the final document as soon as a new contract is awarded.
3. If you have any questions, please contact Bud Hoda of my staff at (916) 643-1250.

MARIO E. JÉRARD
Chief, Environmental Restoration Division
Directorate of Environmental Management

1 Atch
Responses to Comments

DISTRIBUTION: EPA
DHS
RWQCB

**RESPONSES TO AGENCY (RWQCB, DHS, EPA) COMMENTS ON
OU B PRELIMINARY ASSESSMENT
SUMMARY REPORT**

► Responses to RWOCB Comments on OU B Summary Report

► Comment 1 - Site 23, page 5-5, paragraph 2.

Last sentence revised as follows: "Therefore, migration of contaminants to groundwater at Site 23 needs to be investigated. Although groundwater contamination is also present upgradient of the site, additional soil sampling is needed before a relationship between soil and groundwater contamination at Site 23 can be made."

► Comment 2 - Site 36, pages 7-1 and 7-2.

Final two bullets combined and revised as follows:

"• Soil borings and monitoring wells will be completed as necessary during the remedial investigation to determine the extent of contamination."

► Comment 3 - Site 47, page 7-1, bullet 3.

Sentence revised as follows: "At least one on-site groundwater monitoring well may be needed to help evaluate the extent of groundwater contamination from Site 47."

► Comment 4 - Site 48, page 4-11, paragraph 1.

Second sentence revised as follows: "Historically, the groundwater at McClellan AFB has flowed south/southwest, however, temporary fluctuations in flow direction may have occurred as a result of Base production well 13's pumping influence from 1981 to 1985."

► Comment 5 - PRL S-13, page 3-9, paragraph 2.

This comment has already been addressed by a letter from McClellan AFB Environmental Management.

► Comment 6 - PRL S-13, page 6-1.

Included additional bullet as follows: "Sampling storm water runoff from the location."

► Comment 7 - PRL S-30, page 3-6, Figure 3-3.

Figure 3-3 corrected to show additional industrial wastewater line parallelling the eastern side of the location as shown correctly on Figure 3-2.

► Comment 8 - PRL T-3, page 5-1, paragraph 1.

Regulation conformance for all USTs at McClellan AFB is provided for under a separate program by Environmental Management.

Comment 9 - PRL T-45, page 3-1, Figure 3-2.

Figure corrected to indicate location on the south side of the creek (also corrected on Figure 1-1).

Comment 10 - PRL T-48, page 6-1, paragraph 4.

(See response to Comment 8.)

Comment 11 - PRL T-60, page 7-1, paragraph 2.

Last sentence revised as follows: "The investigations may include sampling and analysis of soil adjacent to and below the abandoned tank."

Responses to DHS Comments on OU B Summary Report

Primary Concerns

Comment 1 - PRL B-9.

Recommending a PRL for no further action, even if adjacent to one requiring further investigation, would not limit the scope of the RI; i.e., samples may be taken as appropriate within the boundaries of PRL B-9 as part of the investigation to define the extent of contamination at PRL 29 even if PRL B-9 has been removed from the Air Force's list of PRLs.

Comment 2 - PRL S-12.

Recommendations for the sampling and analysis of concrete floor samples in Buildings 624C and 624D will not be made until the building is dismantled; PCBs have apparently not been released to site soils, and the potentially contaminated concrete floor is more appropriately handled as an industrial hygiene issue.

Comment 3 - PRL S-41.

(See response to Comment 1)

Comment 4 - SA 21.

Potential contamination from the industrial wastewater line on the west side of Building 603 will be investigated as part of PRL L-5; recommendations are revised to include conducting integrity tests on the fuel/water separator and the underground waste fuel tank in addition to screening the site by collecting near surface soil gas samples before the Study Area is recommended for no further action.

Comment 5 - SA 25.

Recommendations are revised to include conducting an integrity test on the underground storage tank before the Study Area is recommended for no further action.

Comment 6 - SA 30.

The washrack in question is located approximately 500 feet north of SA 30 (off of Figure C-67) and has been designated as SA 3.

Comment 7 - SA 32.

Recommendations are revised to include soil sampling within the area designated as SA 32.

Secondary Concerns/Suggestions:

Comment 1.

Grouping of sites because of geography or related operations will be done in the Remedial Investigation Sampling and Analysis Plan.

Comment 2.

Radioactivity screening will be conducted during remedial investigations of Site 30, PRL L-6, and SA 2.

Comment 3.

Soil samples collected from Sites 23 and 31, PRL 29, and SA 3 will be analyzed for dioxins/furans.

Responses to EPA Comments on OU B Summary Report

GENERAL COMMENTS:

Comment 1

Decisions regarding recommendations for further action or no further action are not made solely on previous soil gas sampling results; a number of factors are considered as supporting evidence for recommendations.

Recommendations for no further investigation are made based on application of each of the following criteria:

- No evidence of historical or current use, handling, storage, or disposal of hazardous materials, or the facility is new and current practice indicates safe and accepted methods of handling of hazardous materials;
- No documented contaminant release;
- No other evidence of potential release (e.g., from aerial photographs, interviews, engineering drawings, etc.);
- No detected soil contamination in analyses of soil samples taken in the area; and
- Very low probability of existence of a contaminant source, based on thorough evaluation of all information.

Regarding screening techniques employed by previous contractors at McClellan Air Force Base, the scope of this preliminary assessment effort was to report data; much of the data has QA/QC limitations which sometimes prohibits their interpretation and comparison.

Comment 2

Recommendations in Information Summary Sheets are substantiated with additional rationale when additional information is available. All available information regarding historical waste management practices and potential contamination is included within the Summary Sheets, however, some data gaps do exist because pertinent information was not available during the information search.

Comment 3

No other criteria or basis for determining metal contamination in soils was available for this investigation, and TTLCs and STLCs were used only for comparison purposes; collection and analysis of background samples will be performed in the remedial investigation.

►

SPECIFIC COMMENTS:

Comment 1 - Section 1.0, Introduction (page 1-1, paragraph 2, bullet 3)

Bullet revised as follows: "Provide recommendations for further investigations or no further action at Sites/PRLs or Study Areas (SAs);".

Comment 2 - Section 1.0, Introduction (page 1-2, paragraph 1, sentence 5)

Sentence revised as follows: "However, some boundaries were modified to more accurately reflect surface features of the OU (i.e., buildings and roads) (see Section 3, Historical and Current Activities)."

Comment 3 - Section 2.0, Procedures (page 2-1)

Site-specific information which was used to prepare the Preliminary Assessment report or the Information Summary Sheet was obtained from three primary sources: site inspections, file searches for historical waste management practices, and personnel interviews. The types of information obtained during the site inspection included the following:

- Building number/area description
- Date of inspection
- Inspector
- Contacts (name, title, directorate, phone number)
- Current building operations information:
 - Operations
 - Dates of operations
 - Materials handled/stored and method
 - Wastes generated and quantity
 - Disposal practices
 - Hazardous material containers and quantity
 - Release control features
 - Flooring characteristics
 - Drains/sumps/tanks use and location
 - Exterior use/features
- Historical operations information:
 - Building/area use
 - Exterior use
 - Dates of operations

- Previous employees (potential contacts)
- Materials handled
- Wastes generated
- Disposal practices
- Drains/sumps/tanks
- Detailed site map with inspector's notes

McClellan AFB file search procedures included the following:

- Construction and schematic drawings were catalogued and included on an index list for cross referencing by building number and site/PRL/SA number.
- Previous McClellan AFB sampling and analysis data was accessed using the Environmental Management Master Sample Log Book which was then indexed by Building number and site number.
- Bioenvironmental Engineering files were organized by building number and contained hazardous material data sheets in addition to other miscellaneous information on the types of hazardous materials handled in buildings on base.
- All pertinent file materials on the use, handling, or storage of hazardous materials were copied and included in the individual site/PRL/SA file.

Procedures used to obtain and conduct personnel interviews included:

- Potential interviewees were identified using the following primary sources:
 - Requests from EM to various base directorates for lists of personnel who had worked at various facilities;
 - Site inspection contacts and references;
 - Bioenvironmental Engineering files; and
 - Contact database for the project.
- During the initial interview, information regarding the interviewee's general knowledge of base operations, previous base workplaces, and site familiarity was obtained.
- The types of information obtained on a specific site, PRL, or SA would be similar to that obtained during the site inspection as outlined above.
- Information from personnel interviews has been included in a contact database organized by date of interview, name of interviewee, building number/area, and site/PRL/SA number for future contact references.

- The decision point in which a search for knowledgeable personnel is deemed complete is when all potential knowledgeable personnel from the sources listed above have been contacted and interviewed; however, it is not always possible to fill all data gaps.

Information obtained during site inspections is included within the various sections of the Preliminary Assessment report or Information Summary Sheet, and copies of the site inspection notes are located in the Site Files.

Comment 4 - Section 2.1, PA/SF Investigation (page 2-1)

The McClellan AFB files that were reviewed to obtain information from the PA/SF investigation are also listed in Table 2-1, and procedures used for the file search are described in the response to Comment 3 above.

Comment 5 - Section 2.3, Study Area Assessment (page 2-6, paragraph 4, bullets)

Soil gas sampling results or ground penetrating radar investigations were not available for any of the Study Areas assessed during the OU B preliminary assessment investigation.

Comment 6 - Section 4.1, Operations (Waste Disposal Areas and Treatment Facilities)

Background information regarding treatment and waste disposal practices are included in the individual Preliminary Assessment reports for Sites 23, 31, and 48 and PRLs P-2, S-5, 29, and 30.

Comment 7 - Appendix A, Section 2.4 Operations (page 2-1)

References used for the completion of this section include the following:

- CH2M Hill, 1981. Installation Restoration Program, Phase I, Record Search, for McClellan Air Force Base, California. Draft. Prepared for Air Force Engineering Services Center, Directorate of Environmental Planning, Tyndall Air Force Base, Florida.
- McLaren Environmental Engineering, 1986. Final Basewide Report on Contamination, McClellan Air Force Base, Sacramento, California. Prepared for Department of the Air Force, Sacramento Air Logistics Center, McClellan Air Force Base, California.

Comment 8 - Appendix A, Section 4.4, Community Water Sources (page 4-4, paragraph 7)

First sentence revised as follows: "The communities in the vicinity of McClellan AFB receive water from private wells and municipal water supplies; the nearest private wells supplying potable water are located east (upgradient) of the base and west of the base, and the nearest municipal water supply wells are located approximately 1,500 to 4,000 feet west of the base as shown on Figure 4-3."

Comment 9 - Appendix B, Site 23, 4.1.2 Analytical Results (page 4-4, paragraph 1)

Rationale used by previous contractors to make soil sampling decisions based on soil gas results was not apparent; sampling points appeared to have been preselected. References to the document presenting McLaren's sampling procedures and decision criteria are given on page 4-1 (i.e., McLaren, 1986b).

Comment 10 - Appendix B, Site 23, 4.1.3, Adequacy of Soil Characterization (page 4-8, paragraph 2)

First sentence revised as follows: "The number of samples collected is considered sufficient to assess the spatial distribution of contaminants."

Comment 11 - Appendix B, Site 23, 4.2, Soil Gas Results (page 4-9, paragraph 5)

Specific procedures used during previous investigations to make decisions regarding the collection of data was not available and, therefore, was not used in this evaluation of the need for further investigation. The primary focus of the Preliminary Assessment investigation was to obtain and present site-specific data from previous investigations and to identify data gaps; all data presented in the preliminary assessment reports will be interpreted during preparation of the Sampling and Analysis Plan for the Remedial Investigation in order to make appropriate decisions.

Comment 12 - Appendix B, Site 23, 7.0, Conclusions and Recommendations (page 7-1, paragraph 3)

Additional recommendation for further action inserted as third bullet:

"•Investigate the potential for groundwater contamination."

Comment 13 - Appendix B, PRL 29, 7.0, Conclusions and Recommendations (page 7-1)

All personnel who were potentially knowledgeable of historical operations at PRL 29 were screened and interviewed, if appropriate, and information regarding the location of the transformer storage area or the number of transformers stored in the area was not obtained; an appropriate sampling strategy will be developed in the Remedial Investigation Sampling and Analysis Plan.

Comment 14 - Appendix B, Site 30, 3.0, Site Description (page 3-1)

Study Area 2 (Building 628) is not within the boundaries of Site 30 (a storage and disposal area east of Building 628); however, the two areas will be investigated together during the Remedial Investigation of this area. Study areas are not depicted on drawings within the Preliminary Assessment reports because at the time the Preliminary Assessment reports were written, Study Areas had not yet been identified.

► Comment 15 - Appendix B, Site 30, 7.0, Conclusions and Recommendations (page 7-1)

► A soil gas investigation will be conducted at Site 30 prior to initiating the Remedial Investigation of this area. In paragraph 2, bullet 1, the recommendation to also analyze soil samples for radionuclides is added.

Comment 16 - Appendix B, Site 31, 7.0, Conclusions and Recommendations (page 7-1)

Existing information regarding Site 31 will be used to propose additional borings in the Remedial Investigation Sampling and Analysis Plan. Paragraph 4 (second bullet) is revised to include a recommendation to also analyze soil samples for polychlorinated dibenzofurans, polychlorinated quarterphenyls, and dioxins which may have been generated during refuse incineration as a result of incomplete combustion of chlorinated organics.

Comment 17 - Appendix B, PRL 35, 7.0, Conclusions and Recommendations (page 6-1)

The recommendation for no further action at PRL 35 is maintained; there is no evidence that a burial pit was located at the site. Soil gas concentrations measured during previous investigations may have resulted from contamination originating at Building 652 (PRL S-34). However, additional investigation of this area will be conducted during the RI as part of the investigation of PRL S-34, including a boring west of the southern portion of Building 62.

Comment 18 - Appendix B, Site 36, 7.0, Conclusions and Recommendations (page 7-1)

The exact extent of additional investigations will be presented in the Sampling and Analysis Plan for the Remedial Investigation of Site 36.

Comment 19 - Appendix B, Site 47, 4.2.2, Analytical Results, Metals (page 4-12)

Comment is addressed in Response to General Comment 3.

Comment 20 - Appendix B, Site 47, 7.0, Conclusions and Recommendations (page 7-1)

The Remedial Investigation Sampling and Analysis Plan will consider remedial alternatives in proposing the collection of information necessary to evaluate the performance of the possible alternatives.

Comment 21 - Appendix B, Site 48, 7.0, Conclusions and Recommendations (page 7-1)

The exact extent of additional investigations will be presented in the Remedial Investigation Sampling and Analysis Plan.

Comment 22 - Appendix B, PRL B-1, 4.3.2, Potential for Migration to Surface Water (page 4-2)

The ground surface at PRL B-1 is relatively flat with a very slight slope toward the west. Because the ground surface in this area is unpaved, surface water would most likely infiltrate into soils. During severe storm events, surface water may flow to a small drainage ditch located approximately 150 to 200 feet west of PRL B-1 which eventually leads to Magpie Creek.

Comment 23 - Appendix B, PRL B-1, 5.0, Conclusions and Recommendations (page 5-1)

The discrepancy between McLaren's and Radian's findings was not possible to resolve; however, the procedures and methodologies used by Radian to identify potential contaminant sources were thorough and included aerial photograph review of the entire Operable Unit.

Comment 24 - Appendix B, PRL B-9, 1.0, Introduction (page 1-1, paragraph 1)

Second sentence revised as follows: "the unconfirmed location of PRL B-9 is shown in Figure 1-1."

Comment 25 - Appendix B, PRL B-9, 5.0, Conclusions and Recommendations (page 5-1)

(See Response to Comment 23)

Comment 26 - Appendix B, PRL L-5, 3.1, Location Delineation (page 3-1)

The contents of PRL L-6 flow into and then through a portion of PRL-5, therefore, the pipelines are connected. Information regarding the age of the pipeline was not available. Information regarding the size and composition of the pipeline is added to Figure 3-2; information regarding specific leak types and locations is shown in the table below (page 12) and will also be presented in the Sampling and Analysis Plan for the RI as rationale for sample locations.

Comment 27 - Appendix B, PRL L-5, Figure 3-2 (page 3-3)

Figure 3-2 is revised to differentiate PRLs L-5 and L-6 and indicate wastewater flow directions; discharge points are at each building with connections to the IWL.

Comment 28 - Appendix B, PRL L-5, 5.0, Conclusions and Recommendations (page 5-1)

Background soil borings and groundwater quality will be addressed in the RI.

IWL LEAK LOCATIONS AND TYPES AT PRL L-5 AND PRL L-6

Leak Location ¹	Leak Type
PRL L-5	
250' E of bend in pipe	Line failed pressure testing
200' E of bend in pipe	Line failed pressure testing
150' E of bend in pipe	Line failed pressure testing
100' E of bend in pipe	Line failed pressure testing
50' E of bend in pipe	Line failed pressure testing
100' N of MH 12P	Line failed pressure testing
54' E of MH 12T	Joint that failed leak testing
31' W of MH 655A	Joint that failed leak testing
3' W of MH 12B	Joint that failed leak testing
135' N of MH 12C	Joint that failed leak testing
75' NE of MH 12D	Joint that failed leak testing
3' E of MH 12P	Joint that failed leak testing
35' S of MH 12P	Joint that failed leak testing
56' N of MH 655D	Cracked joint
42' N of MH 655D	Cracked joint
332' N of MH 12V	Joint that failed leak testing
257' N of MH 12V	Joint that failed leak testing
98' N of MH 12V	Joint that failed leak testing
29' N of MH 12V	Cracked joint
229' W of MH 58A	Offset joint
217' W of MH 58A	Cracked joint
22' W of MH 58A	Cracked joint
306' N of MH 60	Offset joint
6' S of MH 61	Longitudinal crack
344' N of MH 63	Longitudinal and circumferential cracks
113' N of MH 63	Longitudinal crack
3' N of MH 63	Circumferential crack
30' N of MH 64	Longitudinal and circumferential cracks
PRL L-6	
Next to washrack 652	Line failed/could not test
MH 12F	Leaking access cover
108' E of MH 12H	Joint failed leak test
15' E of MH 12H	Joint failed leak test
415' N of MH 12I	Crack in joint
226' N of MH 12I	Crushed pipe
166' N of MH 12I	Longitudinal crack
109' N of MH 12I	Crack in joint
75' N of MH 12I	Crushed pipe
28' N of MH 12I	Crushed pipe

(Continued)

IWL LEAK LOCATIONS AND TYPES AT PRL L-5 AND PRL L-6 (Continued)

Leak Location ¹	Leak Type
PRL L-6 (Continued)	
284' N of MH 12J	Circumferential crack
207' N of MH 12J	Circumferential crack
163' N of MH 12J	Joint failed leak test
89' N of MH 12J	Roots or holes in pipe
MH 12J	Leaking access cover
5' N of MH 12K	Missing pipe
105' N of MH 12L	Incompatible pipe material
55' N of MH 12K	Incompatible pipe material
5' N of MH 12K	Incompatible pipe material
12' W of MH 12M	Incompatible pipe material/low area
182' N of MH 12N	Crack in joint
26' N of MH 12N	Longitudinal crack

¹ See site maps for reference points (MH numbers).

Source: EG&G Idaho, Inc., 1988.

Comment 29 - Appendix B, PRL L-6, 3.0, Location Designation (page 3-1)

Second sentence in the first paragraph revised as follows: "The location consists of the Industrial Wastewater Line (IWL) in the central portion of OU B"; Sentence added to paragraph four as follows: "Wastewater flow in this section of the IWL is in a generally northward direction to the IWTP north of OU B", and Figure 3-2 revised to indicate flow directions in IWL.

Comment 30 - Appendix B, PRL L-6, 3.2, Historical Activities (pages 3-1 to 3-4)

Wastewater within the section of IWL identified as PRL L-6 originates from only two sources as shown on Figure 3-2, Buildings 628 and 552. Direction of flow is addressed in Comment 29. Wastewater from PRL L-6 is discharged into PRL L-5 and then flows northward to the IWTP north of OU B.

Comment 31 - Appendix B, PRL L-6, 5.0, Conclusions and Recommendations (page 5-1)

(See response to Comment 28); analysis for radionuclides is added to recommendations for soil sample analyses.

Comment 32 - Appendix B, PRL P-2, 5.0, Conclusions and Recommendations (page 5-1)

(No response needed.)

Comment 33 - Appendix B, PRL P-9, 3.1, Location Delineation (page 3-1)

(See response to Comment 23.)

Comment 34 - Appendix B, PRL P-9, 4.3.2, Potential for Migration to Surface Water (page 4-2, paragraph 4)

Last sentence revised as follows: "The ditch at PRL P-9 is unlined, and although the potential for any contaminants that were historically discharged into the ditch over 25 years ago to still be present in near-surface soils is limited, metals may still be present in sediments that could migrate to surface water during periods of run-off after heavy rainfall events. Therefore, potential for release to surface water should be considered."

Comment 35 - Appendix B, PRL P-9, 5.0, Conclusions and Recommendations (page 5-1)

(See response to Comment 23.)

Comment 36 - Appendix B, PRL S-5, 5.0, Conclusions and Recommendations (page 5-1)

(No response needed.)

Comment 37 - Appendix B, PRL S-12, 5.0, Conclusions and Recommendations (page 5-1)

(No response needed.)

Comment 38 - Appendix B, PRL S-13, 3.2, Historical Activities (page 3-4)

The French drain and trench drains are two different sets of drains at PRL S-13. The French drain is oriented east-west and discharged into the drainage ditch that eventually leads to Magpie Creek. The other trenches are located inside the buildings and directly north of Building 727. Runoff from PRL S-13 is not treated before it flows into the drainage ditch. However, the sumps are controlled with a valve and are closed except when it is raining (the valves are periodically opened to allow the sumps to drain). There is no information suggesting that any soil was removed or if it was discolored when the floor to Building 709 was replaced.

Comment 39 - Appendix B, PRL S-13, 5.3.2, Potential for Migration to Surface Water (pages 5-4 and 5-5)

At present, sufficient data does not exist to relate any contamination that may have been detected in surface water samples at McClellan AFB to specific sites; however, these relationships will be investigated during the RI.

Comment 40 - Appendix B, PRL S-13, 6.0, Conclusions and Recommendations (page 6-1)

Included additional bullet as follows; "Sediment in the ditches should be resampled and analyzed for volatile and semivolatile organic compounds and metals because the quality of previous laboratory results from ditch sediment samples is questionable because of apparent laboratory contamination.;" background samples will be collected during the RI.

Comment 41 - Appendix B, PRL S-28, 5.0, Conclusions and Recommendations (page 5-1)

Final sentence added as follows: "If soil gas results indicate the need for collection of soil samples, analyses should include volatile and semivolatile organic compounds and metals."

Comment 42 - Appendix B, PRL S-29, 5.0, Conclusions and Recommendations (page 5-1)

(No response needed.)

Comment 43 - Appendix B, PRL S-30, 3.2, Historical Operations (pages 3-1 to 3-7)

Wastewater is not treated prior to discharge into the IWL. At the sump pit, solid material (e.g., paint chips) are collected and shoveled into 55-gallon drums. There is no available information about stains on the old floor or if it was removed before the new floor was constructed.

Comment 44 - Appendix B, PRL S-30, 5.0, Conclusions and Recommendations (page 5-1)

(No response needed.)

Comment 45 - Appendix B, PRL S-33, 3.2, Historical Activities (page 3-4)

The "industrial drain" mentioned in Section 3.2 (Historical Activities, page 3-4, paragraph 2) is a general reference to off-site disposal (exact location not specified) of the materials used at PRL S-33; the paragraph is revised as follows: "Bioenvironmental Engineering (BE) files contained a 1984 Hazardous Material Data Sheet listing eight hazardous materials that were used regulatory at PRL S-33 for general vehicle maintenance. Table 3-1 lists the chemicals and amounts used. The materials were reportedly used in small quantities and were either consumed in use or diluted and poured down an off-site industrial drain (McClellan AFB, 1984)."

Comment 46 - Appendix B, PRL S-33, 5.0, Conclusions and Recommendations (page 5-1)

Recommendations are revised to replace OVA/PID screening with soil gas sampling and analysis from along the outside perimeter of the building. The reference made in this report to an industrial drain (page 3-4, paragraph 2, last sentence) has apparently been misinterpreted -- there is no drain at this site; the disposal of the hazardous materials listed in Table 3-1 (page 3-5) was off site (see response to comment 45).

Comment 47 - Appendix B, PRL S-34, 5.0, Conclusions and Recommendations (page 5-1)

(No response needed.)

Comment 48 - Appendix B, PRL S-35, 3.2, Historical Activities (page 3-1, paragraph 5)

The following sentence is added after the second sentence of the paragraph as follows: "The test cell areas were used primarily to repair and test electrical generators."

Comment 49 - Appendix B, PRL S-35, 4.3.2, Potential for Migration to Surface Water (page 4-3)

The storm drains around Building 654 are lined, however, information regarding the type of lining material was not available.

Comment 50 - Appendix B, PRL S-35, Potential Hazards (page 4-3)

Section added as follows:

"4.3.3 Potential for Migration to Air

Surface characteristics of the location and contaminant characteristics also influence the potential for migration to air. The surface at PRL S-35 is paved which limits the ability

of volatile contaminants in soils to migrate to the air; therefore, the potential for migration to air is considered to be very low."

Comment 51 - Appendix B, PRL S-35, 5.0, Conclusions and Recommendations (page 5-1)

Soil sampling from beneath any cracks in concrete flooring will be conducted if renovation or demolition of the building is performed.

Comment 52 - Appendix B, PRL S-41, 3.2, Historical Operations (page 3-4)

First paragraph is revised as follows: "Minor fuel and oil spills have occurred..."

Comment 53 - Appendix B, PRL S-41, 3.3, Current Operations (page 3-4)

Last sentence of the third paragraph is revised as follows: "A small amount of runoff drains into the unlined drainage ditch along Dean Street."

Comment 54 - Appendix B, PRL S-41, 5.0, Conclusions and Recommendations (page 5-1)

The drainage ditch along Dean Street south of PRL S-41 which may have received runoff from the site is unlined and will be sampled as part of the investigation of Study Area 16; the recommendations for SA 16 are revised to reflect this sampling.

Comment 55 - Appendix B, PRL T-8, 5.0, Conclusions and Recommendations (page 5-1)

The recommendation for soil sample analysis is revised to also include semivolatile organic compounds. Any recommendations for replacement of tanks and piping are addressed in a separate UST program.

Comment 56 - Appendix B, PRL T-45, 6.0, Conclusions and Recommendations (page 6-1)

Sediments from the drainage ditch (i.e., Magpie Creek) will be sampled and analyzed during the investigation of Operable Unit C as a separate site.

Comment 57 - Appendix B, PRL T-46, 6.0, Conclusions and Recommendations (page 6-1)

(No response needed.)

Comment 58 - Appendix B, PRL T-48, 6.0, Conclusions and Recommendations (page 6-1)

(No response needed.)

Comment 59 - Appendix B, PRL T-60, 7.0, Conclusions and Recommendations (page 7-1)

Tank and associated piping removal, including soil sampling and analysis from beneath the tank after removal, are addressed in a separate UST program.

Comment 60 - Appendix C, SA-1, Recommendations (page C-120)

Recommendations revised as follows: "Collect and analyze soil samples from the area east of Building 626A where Freon® was reportedly dumped."

Comment 61 - Appendix C, SA-2, Recommendations (page C-127)

(No response needed.)

Comment 62 - Appendix C, SA-3, Recommendations (page C-130)

(No response needed.)

Comment 63 - Appendix C, SA-4, Recommendations (page C-136)

Recommendations are revised to replace PID/FID screening with soil gas sampling and analysis around the perimeter of Building 650, and based on the soil gas results, soil samples may be collected and analyzed.

Comment 64 - Appendix C, SA-5, Recommendations (page C-132)

(No response needed.)

Comment 65 - Appendix C, SA-6, Recommendations (page C-142)

(No response needed.)

Comment 66 - Appendix C, SA-7, Recommendations (page C-147)

(No response needed.)

Comment 67 - Appendix C, SA-8, Recommendations (page C-149)

(No response needed.)

Comment 68 - Appendix C, SA-9, Recommendations (page C-155)

(No response needed.)

Comment 69 - Appendix C, SA-10, Recommendations (page C-160)

(No response needed.)

Comment 70 - Appendix C, SA-11, Recommendations (page C-163)

(No response needed.)

Comment 71 - Appendix C, SA-12, Recommendations (page C-168)

(No response needed.)

Comment 72 - Appendix C, SA-13, Recommendations (page C-175)

(No response needed.)

Comment 73 - Appendix C, SA-14, Recommendations (page C-179)

(No response needed.)

Comment 74 - Appendix C, SA-15, Recommendations (page C-182)

(No response needed.)

Comment 75 - Appendix C, SA-16, Recommendations (page C-186)

(No response needed.)

Comment 76 - Appendix C, SA-17, Recommendations (page C-182)

(No response needed.)

Comment 77 - Appendix C, SA-18, Recommendations (page C-192)

(No response needed.)

Comment 78 - Appendix C, SA-19, Recommendations (page C-195)

(No response needed.)

Comment 79 - Appendix C, SA-20, Recommendations (page C-199)

(No response needed.)

Comment 80 - Appendix C, SA-21, Recommendations (page C-203)

The following responses correspond to the comments listed:

- The steel storage tank was leak tested in 1987, passing the test. EG&G Idaho recommended in 1987 that the separator be lined with material resistant to petroleum

hydrocarbons; this recommended work has not been performed because steel tanks are generally resistant to hydrocarbons and, therefore, lining was not necessary.

- EG&G Idaho reported that the tank, separator, and trough were installed in 1983.
- The locations of piping, separator, and tank are added to Figure C-58.
- The quantity and types of materials stored on site cannot be determined based on aerial photographs. The apparent gap in dates of activity at SA-21 is in error; storage activities (see page C-202, Activity C) actually took place intermittently from 1946 to 1984.

Comment 81 - Appendix C, SA-24, Recommendations (page C-206)

(No response needed.)

Comment 82 - Appendix C, SA-25, Recommendations (page C-210)

(No response needed.)

Comment 83 - Appendix C, SA-29, Recommendations (page C-230)

All four underground storage tanks were leak tested by EG&G Idaho in 1987; all passed the leak tests. The tanks are all of steel construction and were installed in approximately 1977; EG&G filed permits for all the tanks.

Comment 84 - Appendix C, SA-30, Recommendations (page C-233)

The following responses correspond to the comments listed:

- The washrack referred to on page C-233 is located approximately 500 feet north of Building 685 and is identified as SA-3.
- (See Information Summary Sheet for Study Area 3).
- Hazardous materials are disposed of at the washrack north of Building 685 (SA 3). There are no floor drains in Building 685.
- No waste materials are stored on site.
- No underground storage tanks are located at SA-30.

Comment 85 - Appendix C, SA-31, Recommendations (page C-237)

The drain in the center of the washrack will be investigated to determine whether it is connected to the IWL before recommending the study area for no further action.

Comment 86 - Appendix C, SA-32, Recommendations (page C-240)

No records could be found or interview information obtained describing the purpose of the soil sampling at a reported "ditch northeast of Building 650", or the sample locations and depths. The samples were collected in 1987 by McClellan AFB Environmental Management. No potential source of the detected contaminants has been identified. The organic compounds detected in soil samples from Study Area 32 are listed below:

Sample Number	Compound Detected	Concentration ($\mu\text{g}/\text{kg}$)
EM 2376	Phenanthrene	16
	Fluoranthene	29
	Pyrene	29
	Buyl benzyl phthalate	47
	Chrysene	26
	Benzo[a]anthracene	28
EM 2378	Phenanthrene	25
	Fluoranthene	66
	Pyrene	62
	Chrysene	47
	Benzo[a]anthracene	61
	benzo[k]fluoranthene	56
EM 2374	Acenaphthylene	73
	Acenaphthene	180
	Fluorene	213
	Phenanthrene	1650
	Anthracene	288
EM 2379	Fluoranthene	1359
	Pyrene	1110
	Chrysene	398
	Benzo[a]anthracene	561
	Benzo[k]fluoranthene	461
	Indeno[1,2,3-cd]pyrene	141
	Benzo[g,h,i]perylene	61

Comment 87 - Appendix C, SA-33, Recommendations (page C-243)

The information obtained reporting the possibility of transformer storage at SA-33 is unconfirmed. Aerial photographs show objects being stored; however, the scale of the photographs prohibits identification of the objects; storage activities were intermittent throughout the period. The date of the gravel cover placement at the site could not be determined.

EDITORIAL COMMENTS:

Comment 1 - Appendix A, Section 4.0, Summary of Operable Unit B Investigation

Table 4-1 was included at the end of the section because of its length; the reference to the table in the text identifies the location of the table by page number.

Comment 2 - Appendix A, Figure 2-1 (page 2-2)

The figure has been corrected.

Comment 3 - Appendix B, Site 23, Table 5-1 (page 5-3)

Spelling of "Chloroform" is corrected.

Comment 4 - Appendix B, Site 29, 3.0, Location Description (page 3-1, paragraph 1)

First sentence revised as follows: "Potential Release Location (PRL) 29 is located in the west-central part of Operable Unit (OU) B of McClellan Air Force Base (AFB), as shown in Figure 3-1."

Comment 5 - Appendix B, PRL 35, 4.1, Soil Results (page 4-1, paragraph 3)

Misspelled word in fourth sentence corrected to: deep auger "profile" boring.

Comment 6 - Appendix B, PRL 43, Introduction (page 1-3, paragraph 1)

The spelling of the word "understanding" is corrected in the first sentence.